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ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR 1987

COMPLETED
2738

HEARINGS

ORIGINAL

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

HOUSE OF REPRESENTATIVES

NINETY-NINTH CONGRESS

SECOND SESSION

SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

TOM BEVILL, Alabama, *Chairman*

LINDY (MRS. HALE) BOGGS, Louisiana
BILL CHAPPELL, Jr., Florida
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HUNTER L. SPILLAN, GEORGE A. URIAN, DONALD P. SMITH, and AARON D. EDMONDSON, *Staff Assistants*

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South Atlantic Division	1211
South Pacific Division	1429
Pacific Ocean Division	1655

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ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR 1987

TUESDAY, FEBRUARY 18, 1986.

DEPARTMENT OF THE ARMY

ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS) AND THE CHIEF OF ENGINEERS

WITNESSES

ROBERT K. DAWSON, ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS)

LT. GEN. E.R. HEIBERG, CHIEF, CORPS OF ENGINEERS

MAJ. GEN. HENRY J. HATCH, DIRECTOR OF CIVIL WORKS

DON CLUFF, CHIEF, PROGRAMS DIVISION, DIRECTORATE OF CIVIL WORKS

OPENING REMARKS

Mr. BEVILL. The committee will come to order.

We are glad to welcome Secretary Dawson and congratulate him on his confirmation as Assistant Secretary of the Army, and we are proud of him, and especially we are proud of the state he is from.

Mr. DAWSON. Thank you very much.

Mr. BEVILL. Alabama is proud of him, as everybody is.

We also welcome our friends from the Corps of Engineers. General Heiberg, we are always glad to have you with us, the Chief of the Corps of Engineers. General Hatch, we are pleased to have you as Director of Civil Works. I believe this is your first appearance in this capacity, but you have been here many times before.

General HATCH. First time in this capacity.

Mr. BEVILL. We also want to welcome Don Cluff, Chief of the Programs Division, and this is your first time, I believe.

Mr. CLUFF. Yes, sir.

Mr. BEVILL. So we are pleased to have you.

Mr. Secretary, we will start off the FY 1987 hearings with you.

INTRODUCTIONS

Mr. DAWSON. Thank you very much, Mr. Chairman, and it is an honor to have that be the case.

We are pleased to be here today with you, and I would like to take just a moment and reintroduce the people with me. You mentioned Chief of Engineers, Lieutenant General E.R. Heiberg III. I especially want to mention the new Director of Civil Works, Major General Henry J. Hatch; and if I could take a minute to tell you a

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little bit about General Hatch, although I know you have all worked with him before. He is a highly decorated soldier and hoids the Legion of Merit, two Bronze Stars, three Air Medals, and two Army Commendation Medals. He served as a Division Engineer and a District Engineer. He commanded the 326th Engineer Battalion, 101st Airborne Division in Vietnam. He is a licensed lay reader in the Episcopal Church.

Also making his first appearance with you, as you mentioned, is Don Cluff who was selected by us last summer to be Chief of the Programs Division. He comes from OMB where he worked with this committee a great deal, where he was Chief of the Water Resources Branch since 1981 and before that he worked for years with GAO. His broad and extensive experience will be a great asset to you and to us.

Also with me, Mr. Chairman, behind us is the new Chief of Policy, Dr. Bory Steinberg, and I wanted to particulary mention Dr. Steinberg and take note of the fact that he was involved in the budget and programming process for nearly 20 years and was promoted to his present position last summer to a much expanded new Office of Policy and will be still actively involved, I am sure, with this committee. But since he had sat at this table so many years, I wanted to take note of that for a moment.

Also behind me are two members of my staff, Dr. G. Edward Dickey, my Deputy for Program Planning and my Deputy for Budget, Mr. Steven Dola.

TURNING POINT

Mr. Chairman, this afternoon's appearance is my fifth before your subcommittee and the second as the lead Department of the Army witness. I have seen firsthand just how responsive members of this subcommittee have been in adjusting to the new reality brought about by the severe budgetary situation which confronts this nation. I know we can work together, build on the progress of the past several years and take advantage of what surely is a great opportunity that has presented itself to the Civil Works Program and the Corps of Engineers. I am not at all sure that we will have such an opportunity again in the foreseeable future. It may well be now or never for the Army Civil Works Program.

In fact, I would like to depart from the prepared text for a moment, Mr. Chairman, and say I would predict that a year from now when we are here together, we will either be celebrating a new revitalized Army Civil Works Program or we will be talking about a program that is withering away. I think what will determine which of those courses of action occurs is whether we get a bill this year that gives us new authorizations; and I realize that is not before this committee, but I also am aware of the great leadership that this committee exerts on everything that has to do with water resources. So I did want to leave that message with you.

PRESENTATION

With your permission, Mr. Chairman, I would like to proceed by asking that my prepared statement and that of General Heiberg be placed in the record of these hearings.

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Mr. BEVILL. It is so ordered.

Mr. DAWSON. I would like to summarize portions of my complete statement and I ask the Chief of Engineers be permitted also to summarize his statement.

Mr. BEVILL. Without objection, so ordered.

Mr. DAWSON. Then if time permits General Hatch is prepared to report on the current prospects for obtaining signed agreements for the new construction starts included in the 1985 Supplemental Appropriations Act, the so-called 41 new starts.

SUMMARY OF MR. DAWSON'S STATEMENT

Mr. Chairman, it speaks well for our program and the benefits that flow from it that General Heiberg and I are able to present a progressive water resources development program. We are able to do this even in face of the stalemate that has existed over the program and in spite of the Balanced Budget and Deficit Control Act, the so-called Gramm-Rudman Act. The fact that the fiscal year 1987 budget includes a commitment for additional new starts shows that the Administration believes pending legislation can be enacted which will seize the excellent opportunity to resolve the new start and cost sharing issues for the first time in nearly 15 years.

The main reason we believe we can have a strong program, even in this era of budget restraints, is that the Army's Civil Works Program produces tangible, measurable benefits, something I have heard you and Chairman Whitten speak eloquently about on many occasions. This encourages program beneficiaries to contribute on a pay-as-you-go basis an increased share of program costs. This principle of benefit-based financing is embodied in the 19 new construction starts proposed for fiscal year 1987 with a total project cost of $716 million, 37 percent of which will be funded by non-federal sponsors.

FISCAL YEAR 1987 BUDGET

The overall fiscal year 1987 program is predicated on federal appropriations of some $3.08 billion and non-federal contributions of $227 million. The budget request includes $26 million to be appropriated from the Inland Waterways Trust Fund, as part of the follow-on funding for four lock and dam projects included in the fiscal year 1985 supplemental. Offsetting receipts that would be collected under existing law, $19 million, and under pending legislation, $203 million, would result in net federal appropriations of just under $2.9 billion.

For the first time since fiscal year 1983, the level of new budget authority being sought for Construction, General, will exceed $1.0 billion. Non-federal cash contributions required under terms of existing and proposed agreements would add another $200 million.

The request of $1.4 billion for O&M, General, continues to be the single largest request in the Civil Works budget. Contingent upon passage of pending legislation this fiscal year that would authorize collection of port cargo fees, receipts of about $203 million are expected to be available for appropriation from the Harbor Maintenance Trust Fund in fiscal year 1987, thereby reducing appropriations for O&M, General, to just under $1.2 billion.

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BUDGET DEFICIT REDUCTIONS—FY 1986

Reductions of $121 million are being applied to the new budget authority made available by fiscal year 1986 appropriations, as required by the Gramm-Rudman Act. While this will impact all programs, projects and activities, we should be able to achieve these reductions by slipping some scheduled work and deferring some other scheduled work to fiscal year 1987. We should be able to meet all important commitments without major adverse effects. Increased revenues from user fees and non-federal cost sharing will help to offset Gramm-Rudman reductions. The importance of cost sharing has become obvious in this critical period for civil works.

FORMULATION OF FY 1987 PROGRAM

The fiscal year 1987 budget request for the Civil Works Program was formulated in anticipation of having to meet the maximum allowable federal deficit of $144 billion for fiscal year 1987. Nevertheless, increased non-federal contributions, anticipated to accrue from legislation now under consideration by the Congress, have permitted formulation of a stable five-year Civil Works Program of new and ongoing work, while federal appropriations remain at the same or slightly reduced levels. Failure to enact a water resources development bill acceptable to the President, though, would negate much of what we and this subcommittee have started and would jeopardize the future of the overall Civil Works Program. Cost sharing and user fees will uphold the great work done by the subcommittee in the past and allow it to continue, even under ever-increasing budgetary pressure.

FUNDING OF FY 1987 PROGRAM

The fiscal year 1987 program is based on appropriations of $229 million from existing and proposed trust funds, appropriations of $2.85 billion from general appropriation funds and non-federal contributions of $227 million. The magnitude of the non-federal contribution will increase as we move ahead with new construction and as user fee receipts increase through normal growth of commerce or, in the case of the inland waterways fuel tax, an increase in the tax rate itself. In spite of the overall reduction in the federal budget for fiscal year 1987, Army Civil Works continues to enjoy strong program funding as a result of anticipated increases in non-federal participation. If these non-federal payments are not realized, there will not be continued Administration support for federal funding and the Civil Works Program will suffer. Moreover, whatever federal funds are made available will be, of necessity, diverted toward maintenance of existing projects as opposed to undertaking anything new. Even an adequate level of operation and maintenance will be jeopardized. All of the above contributes to why I feel we are at a crucial crossroads for Army Civil Works.

BASIS FOR DOING BUSINESS

Pressures to reduce the budget deficit will change the way we do business. We should not implement projects or ancillary works that are not economically justified and environmentally sound. The in-

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tegrity of the program rests with Congress' ability to limit itself to good projects and to refrain from making exceptions. With this, the Civil Works Program stands a good chance of weathering this era with a strong program.

Cost sharing principles and contractual conditions of agreements must be the same for all projects. If the subcommittee aids us in maintaining consistency by avoiding legislatively mandated exceptions, we will continue to have a strong program. On the other hand, favored treatment of some sponsors invites loss of federal funding support. We are concerned.

FY 1985 NEW CONSTRUCTION STARTS

An important milestone in the history of water resources development was reached last year under the leadership of this subcommittee. The 1985 Supplemental Appropriations Act broke a decade-long stalemate over new construction starts, signaling Congressional recognition of the desirability of increased cost sharing in all phases of the Civil Works Program. Accordingly, we are making strong and special efforts to carry out this law. We are applying major streamlining to the usual procedures, including concurrent reviews, rapid response to policy questions, and coordinating meetings in the field attended by all levels from the District Engineer to my own office.

As I mentioned earlier, Mr. Chairman, if time permits, General Hatch, under whose leadership those meetings have been occurring, is prepared to give you a more detailed update on how that effort is proceeding.

Preconstruction planning and engineering are proceeding to the point in many cases where it is feasible to execute a binding local cooperation agreement, that is, a definitive cost sharing and financing agreement with project sponsors. We are making it clear to local sponsors that legislation ultimately will determine the cost sharing formulas. Pending final agreement between Congress and the President, cost sharing in S.1567 is being used as the basis for negotiating our agreements with local sponsors.

The fiscal year 1987 budget request includes follow-on funds for 40 of the 41 new construction starts included in the 1985 Supplemental Appropriations Act. The Administration has been generous in budgeting funds to carry out the 1985 Supplemental Appropriations Act and in anticipation of legislation along the lines of S. 1567.

IMPORTANCE OF INCREASED COST SHARING

The fiscal year 1987 budget, like the budgets of the past two years, is predicated on increased cost sharing of all key program activities. Cost sharing allows us to better deal with the federal budget realities. It gives locals a greater say. They are certainly expressing themselves in this regard. And it lends credibility to our program. If these were not solid projects, local sponsors would not be willing to pay their share. Three years of new starts under budgetary pressures attest to the importance of cost sharing.

In conclusion, Mr. Chairman, it has become abundantly clear that the Army Civil Works Program is at a crossroads. We are pre-

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sented with an opportunity, either to go forward in a positive way in the face of severe budget restrictions or risk sliding backward at a time when the nation needs a good, sound water resource development program. As so often in the past, the subcommittee will play a crucial part in the decision. The budget you are about to consider is one which is in tune with today's budgetary realities. I am confident it will receive your careful attention and, I trust, it will merit your support.

On a closing note, Mr. Chairman, I appeal to you and members of the subcommittee to minimize the special treatment of some sponsors which goes beyond the flexibility allowed by generic legislation. Such proposals, while contributing to local development, reduce overall program consistency and equity, which are essential if we are to compete favorably during these times of budget constraints.

Thank you, sir.

Mr. BEVILL. Thank you very much, Mr. Secretary, for a very fine statement.

[The full statement of Robert K. Dawson follows:]

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DEPARTMENT OF THE ARMY

OFFICE OF THE ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS)

COMPLETE STATEMENT

OF

ROBERT K. DAWSON

ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS)

BEFORE THE SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT

COMMITTEE ON APPROPRIATIONS

HOUSE OF REPRESENTATIVES

ON THE FISCAL YEAR 1987 CIVIL WORKS BUDGET

FEBRUARY 18, 1986

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STATEMENT OF ROBERT K. DAWSON
ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS)
BEFORE THE SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT
COMMITTEE ON APPROPRIATIONS
UNITED STATES SENATE
ON THE FISCAL YEAR 1987 CIVIL WORKS BUDGET

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

INTRODUCTION

I am pleased to appear before your subcommittee today to discuss the Army's Civil Works program and Fiscal Year (FY) 1987 budget recommendations. The Chief of Engineers, Lieutenant General E. R. Heiberg III, the Director of Civil Works, Major General Henry J. Hatch, and the new Chief of Programs, Mr. Don Cluff, are with me and will assist in presenting testimony. I would like to note as well, Mr. Chairman, that seated behind me are the new Chief of Policy, Dr. Bory Steinberg, my Deputy for Program Planning, Dr. G. Edward Dickey, and my Deputy for Budget, Mr. Steven Dola.

This afternoon's appearance is my fifth before your subcommittee, and the second as the lead Department of the Army witness. I have seen first hand just how responsive members of this subcommittee have been in adjusting to the new reality brought about by the severe budgetary situation which confronts this Nation. I know we can work together, build on the progress of the past several years, and take advantage of what surely is a great opportunity that has presented itself for the Civil Works program of the Corps of Engineers.

With your permission, Mr. Chairman, I would like to proceed by asking that my complete statement and that of General Heiberg be placed in the record of these hearings. I would like to summarize portions of my complete statement and I ask that the Chief be permitted also to summarize his statement, following which we will be available to answer the subcommittee's questions.

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My statement addresses these topics:

> Fiscal Year 1987 Budget Request;

> Fiscal Year 1985 New Construction Starts;

> Additional Cost Sharing Applications;

> Municipal and Industrial Water Supply Initiative;

> Regulatory Reform; and

> China.

FISCAL YEAR 1987 BUDGET REQUEST

Overview

It speaks well for Army Civil Works that General Heiberg and I are able to present a progressive water resources development program, given the stalemate that has existed over the program and the Balanced Budget and Deficit Control Act, Public Law 99-177. The fact that the FY 1987 budget includes a commitment for additional new starts shows that the Administration believes pending legislation can be enacted which will seize the excellent opportunity to resolve the new start and cost sharing issues for the first time in nearly 15 years. One principal reason we believe we can have a strong program, even in this era of budget restraints, is that the Army's Civil Works program produces tangible benefits. This encourages program beneficiaries to contribute, on a pay-as-you-go basis, an increased share of program costs. This principle of benefit-based financing is embodied in the 19 new construction starts proposed for FY 1987 with a total project cost of about $716 million, 37 percent of which will be funded by non-Federal sponsors. The new construction starts are shown on Table A, which is attached to this statement.

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The FY 1987 program is predicated on Federal appropriations of some $3.08 billion and non-Federal contributions of $227 million. The budget request, which is summarized by appropriation account in Table B, which is attached, includes $26 million to be appropriated from the Inland Waterways Trust Fund, as part of the follow-on funding for the four lock and dam projects included in the FY 1985 Supplemental. Offsetting receipts that would be collected under existing law, $19.1 million, and under pending legislation, $203 million, would result in net Federal appropriations of just under $2.9 billion.

For the first time since FY 1983, the level of new budget authority being sought for Construction, General, will exceed $1.0 billion. Non-Federal cash contributions required under terms of existing and proposed agreements would add another $200 million. The request of $1.4 billion for Operation and Maintenance, General, continues to be the single largest request in the Civil Works budget. Legislation is pending that would authorize collection of fees based upon the value of commercial cargo loaded or unloaded at U. S. ports. These receipts would be made available in a Harbor Maintenance Trust Fund to help pay the cost of maintaining our Nation's ports. Contingent upon passage of such legislation this fiscal year, receipts of about $203 million are expected to be available for appropriation from the Harbor Maintenance Trust Fund in FY 1987, correspondingly reducing appropriations for Operation and Maintenance, General, to just under $1.2 billion.

Relationship to Budget Deficit Reductions

Reductions of $121.2 million are being applied to the new budget authority made available by FY 1986 appropriations, as required by the Balanced Budget and Emergency Deficit Control Act, Public Law 99-177. While the

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reductions will impact all programs, projects, and activities, we should be able to achieve the targeted outlay reductions by slipping some scheduled work and deferring some other scheduled work to FY 1987. Tables listing the amounts to be sequestered in FY 1986 by program, project, or activity were furnished to the subcommittee Chairman on January 31, 1986. Given our management flexibility, we should be able to meet all important commitments without any noticeable adverse effects.

The President's FY 1987 budget, including the request for the Civil Works program, was formulated in anticipation of having to meet the maximum allowable Federal deficit of $144 billion for FY 1987 as established by Public Law 99-177. Nevertheless, increased non-Federal contributions, anticipated to accrue from legislation now under consideration by the Congress, have permitted formulation of a stable Five-Year Civil Works Program of new and ongoing work while Federal appropriations remain at the same or slightly reduced levels. Failure to enact a water resources development bill acceptable to the President, though, would negate much of what we and this subcommittee have started and would jeopardize the future of the overall Civil Works program.

As shown in Table B, the FY 1987 program is based on appropriations of $229 million from existing and proposed trust funds, appropriations of $2.85 billion from general appropriation funds, and non-Federal contributions of $227 million. Some of these amounts anticipate enactment of legislation. The importance of the non-Federal contribution will increase in subsequent years as we move ahead with new construction work and user fee receipts increase as a result of the normal growth of commerce or, in the case of the inland waterways fuel tax, an increase in the tax rate itself. In spite of

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the overall reduction in the Federal budget for FY 1987, Army Civil Works continues to enjoy strong program funding as a result of anticipated increases in non-Federal participation. If these non-Federal payments are not realized, there will not be continued Administration support for Federal funding. Moreover, whatever Federal funds are made available will be, of necessity, diverted toward maintenance of existing projects as opposed to undertaking anything new.

Pressures to reduce the budget deficit, of necessity, must bring about changes in the way we do business. We should not implement projects or ancillary works that are not economically justified and environmentally sound, nor should projects with lower priority outputs, such as recreational boating and beach erosion control, be funded at this time. Consistency is important; thus, individual exceptions to policy, such as relief from the share of costs borne by project sponsors, must be avoided. Cost sharing principles and contractual conditions of agreements must be the same for all projects. Indeed, the credibility and future survivability of the Army Civil Works program are based on consistency in treatment. If the subcommittee aids us in maintaining consistency by avoiding legislatively mandated exceptions, we can have a strong program. In an era where both the Administration and Congress are engaged in an unprecedented search for ways to cut Federal spending, favored treatment of some sponsors, on the other hand, invites loss of Federal funding support. Finally, we should avoid authorization of new programs or expansion of existing programs. Such proposals, while contributing to local development, may be counter to the national objective of reducing Federal expenditures and involvement.

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FISCAL YEAR 1985 NEW CONSTRUCTION STARTS

Implementing Procedures

An important milestone in the history of water resources development was reached last year under the leadership of this subcommittee. Enactment of Public Law 99-88, the Supplemental Appropriations Act, 1985, broke a decade-long stalemate over new construction starts, signaling Congressional recognition of the desirability of increased cost sharing in all phases of the Civil Works program. Accordingly, we are proceeding in an orderly manner to implement this law. Preconstruction planning and engineering are proceeding to the point in many cases where it is feasible to execute a binding Local Cooperation Agreement, that is, a definitive cost sharing and financing agreement with project sponsors. We are making it clear to local sponsors that legislation ultimately will determine the cost sharing formulas. Pending final agreement between Congress and the President, cost sharing in S. 1567 is being used as the basis for negotiating cooperative agreements with local sponsors. For those projects where engineering and design is sufficiently advanced, we are negotiating with project sponsors to develop binding agreements so construction can be initiated using FY 1985 Supplemental or other available funds.

For those projects where additional engineering and design is required and the design and costs are not well enough established to enter into a legally binding agreement--there are several instances where the plan has not been defined--we are seeking Letters of Assurance from project sponsors confirming not only their willingness to participate in project construction but also the applicable cost sharing criteria and financing arrangements applicable to both parties. Once signed, the letter serves as sufficient

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justification for the Corps to use available funds for project preconstruction planning and engineering. The Department of the Army plans to program these projects as new construction starts once engineering and design work is completed and budgetary ceilings and priorities permit their inclusion in our new starts program.

Status Report

The FY 1987 budget request includes follow-on funds for 40 of the 41 new construction starts included in Public Law 99-88, the Supplemental Appropriations Act, 1985. A review of the feasibility study on one project concluded it was essentially a single-purpose water supply project and hence, as stated in the preamble of the Water Supply Act of 1958, should be the responsibility of non-Federal interests. In all other cases, however, we are moving toward completion of at least some elements of each project.

Engineering and design funds are being requested for six of the new construction starts included in P. L. 99-88. Construction should be initiated on the other 34 projects, starting either this fiscal year with FY 1985 Supplemental and/or FY 1986 appropriations or in FY 1987 with FY 1987 appropriations.

We have long recognized that increased cost sharing and financing during construction will necessitate changes in the way sponsors approach water resources development. Accordingly, we have turned to the Interstate Conference on Water Problems, ICWP, the national association of state, regional, and local water policy officials, to assist us in identifying potential contractual problems of sponsors and the Corps' role in resolving, or at least minimizing, those problems. A series of four regional workshops was held on water project financing in 1984, followed up by a Water Project Financing

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Roundtable sponsored by the ICWP. The Roundtable was attended by representatives from involved Federal agencies, the Office of Management and Budget, senior staff representatives from the House and Senate Committees on Appropriations, Public Works, and Interior, and representatives from the investment banking community. Thanks to the help of the ICWP, we now have a better understanding of these potential problem areas.

We have just completed a series of meetings with those District and Division offices involved with implementing the FY 1985 new construction starts. Discussions to date indicate that, in the case of high cost projects, deep draft commercial harbor and channel projects, for example, the sponsors' financial capabilities will result in staged construction of those projects. We also have identified a need to establish interest-earning escrow accounts to meet non-Federal financial requirements as well as the need to undertake additional value-engineering studies to assure development of the most cost-effective plan which is consistent with available financial resources.

Relationship to Existing and Pending Legislation

Implementation of the new construction starts funded in P. L. 99-88 is dependent upon compliance with existing legislative milestones and enactment of certain pending legislation. The 1985 Supplemental established two milestones. First, May 15, 1986, is the date on which 21 projects included in the act become authorized for construction if the pending water resources development bills are not enacted. Second, by June 30, 1986, an acceptable, legally binding contract must be signed if funds appropriated by P. L. 99-88 are to be used to continue work on the 1985 new construction starts other than the inland waterway projects that do not require contracts. Alternative funding

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would be required to continue engineering and design or initiate construction after that date if an agreement is not signed by then.

We hope to have 34 projects under construction in FY 1987 if new authorization legislation consistent with the Administration and Senate majority leadership agreement of last June is enacted. The four lock and dam projects do not require contracts, as I have noted, since the equivalent of non-Federal contributions will be appropriated from the Inland Waterways Trust Fund. These projects will be initiated subsequent to enactment of the agreed upon increase in the inland waterways fuel tax.

Our ability to implement the 13 harbor improvement projects is also contingent upon enactment of pending legislation. In many cases port authorities or states may be willing to sign agreements in the absence of legal authority to levy fees to collect revenue sufficient to offset their share of project costs. However, I cannot, in good faith, start construction without the assurance that fees based on .04 percent of the value of the cargo loaded or unloaded at our Nation's ports would be available in a Harbor Maintenance Trust Fund to offset part of the cost of maintaining our Nation's ports. Use of these receipts would make more general revenue funds available for new construction.

The authorities for both these revenue raising measures are included in the water resources development bills now pending in Congress, but unless a law is enacted in a timely manner, construction of the 16 harbor and 4 lock and dam projects will be delayed.

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ADDITIONAL COST SHARING APPLICATIONS

The FY 1987 budget, like the budgets for the past two years, is predicated on increased cost sharing of all key program activities, not just the new construction starts and subsequent operation and maintenance of those projects. Prior to last year, however, the Appropriations Committees, while recognizing the need for increased cost sharing, had deferred implementation of such proposals until the authorizing and financing committees had completed their own review and acted. This has now been done by both Houses and, while there are differences in various specifics, both authorization bills include financing and cost sharing arrangements. Therefore, to assure equity in treatment among sponsors for comparable phases of the program, I have taken actions to institute cost sharing this fiscal year for Feasibility Phase Studies, the Continuation of Planning and Engineering effort, and the Continuing Authorities Program.

Feasibility Study Cost Sharing

Since we instituted the two-phase study process in 1984, we have entered into conditional cost sharing contracts with the sponsors of 17 ongoing Feasibility Phase Studies. Only one potential sponsor did not sign an agreement to cost share the follow-on study to the reconnaissance phase study when such cost sharing was instituted. Since both pending bills require non-Federal contributions, the cost sharing provisions of these and all future contracts will become effective on March 15, 1986.

Continuation of Planning and Engineering

Work accomplished under both the Continuation of Planning and Engineering and Advance Engineering and Design programs is similar. Heretofore, however, only costs incurred under the Advance Engineering and Design program were cost

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shared as part of the total cost for project implementation. Therefore, to assure equality in treatment among sponsors for comparable phases of the Civil Works program, all obligations incurred under the Continuation of Planning and Engineering program after October 1, 1985, also will be included in the costs to be shared when the project is implemented.

Continuing Authorities Program

Work under the Continuing Authorities Program consists of a variety of activities, including flood control and commercial navigation, very much the same as that accomplished on specifically authorized studies and projects. Thus, to assure consistency among programs and equity among sponsors of comparable work, the cost sharing principles applicable to specifically authorized projects also have been applied to studies and projects initiated under this program after January 1, 1986, and for construction contracts to be awarded after May 15th of this year.

MUNICIPAL AND INDUSTRIAL WATER SUPPLY INITIATIVE

Over the past year, we have continued to make excellent progress in the municipal and industrial water supply initiative mentioned in our appropriations testimony the previous two years. One part of this initiative involves reforms that increase recovery of past Federal investments in municipal and industrial water supply storage within the authority of the 1958 Water Supply Act, while not imposing unfair burdens on project beneficiaries. Most non-Federal sponsors of water supply storage have been very cooperative with us in this regard. The fact that we have been very successful in recovering the levels of past Federal investments envisioned by the Water Supply Act confirms the wisdom of decisions made by the subcommittee to fund multipurpose projects providing water supply storage.

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Another part of our initiative is to aggressively market already built, but as yet unsold, water supply storage space. This involved a nationwide review of existing and potential water users, institutional arrangements, and state enabling legislation to identify potential customers. Individually tailored information packages were provided to each potential customer. As a result of these efforts over the past two years, we have reduced the inventory of unsold water supply storage by more than 40 percent, placing more than 600,000 acre-feet of storage under contract. In addition, we have identified potential customers for all but about 2.5 percent of the municipal and industrial water supply storage built by the Corps of Engineers nationwide. Again, our success here is evidence of the wisdom of the subcommittee in funding these projects in the past.

At the same time, we have increased significantly the amount of Federal costs recovered under these contracts within the discretion offered by existing authorities, while avoiding unfair burdens on project beneficiaries. These efforts not only produce additional revenues for the Federal Government, they also lead to improved management of water supplies, increased attention to conservation, less waste, and reduced pressure for new construction. The cooperative attitude of many state and local entities in working with us in these important endeavors has been gratifying.

REGULATORY REFORM

The FY 1987 regulatory program budget request of almost $53 million is just over the amount appropriated for FY 1986. The regulatory request is relatively small in the context of the overall Civil Works budget. Its size, however, belies its importance to the public and to the economy of the United

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States. Decisions made by Corps of Engineers regulators on permit applications literally affect billions of dollars of private construction work. The quality and timeliness of the decision process has a major economic impact as well as a major impact on how the public views the effectiveness of government.

Balancing private applicants' needs with overall public needs for maintaining the integrity of the Nation's water resources often results in project modifications through permit decisions. These modifications can result in additional expenditures by applicants in the thousands, or in some cases, millions of dollars. In addition to the expense of project modifications, applicants for major projects may have similar size expenditures for environmental studies required in the Corps permit process to identify potential environmental impacts.

The regulatory budget supports a highly professional staff who process approximately 13,000 permit applications per year. We are proud of the excellent way these public servants discharge the very difficult balancing required by the law and regulations. We have developed management methods such as nationwide and regional permits for minor projects with minimal environmental impacts. We have reduced the average time to process individual permit applications by 46 percent, from 130 days to 70 days, since we began our regulatory reform efforts in 1981. Prior to our regulatory reforms, many applications took years to process, sometimes resulting in applicants withdrawing the application and not pursuing the project. Even if the applicant could withstand the delays, the additional time often caused extra costs far out of proportion to the public benefits gained.

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The regulatory program is presently operating at an improved efficiency while maintaining important environmental safeguards. This has allowed for protection of vital water resources while minimizing the financial impact on the private sector. More improvements in the program, however, are still needed. Even slight reductions in the regulatory budget will jeopardize positive reforms with commensurate negative impacts on the regulated public. Any budget decrease would result in increased permit processing times causing associated negative impacts to the U. S. economy and weakening public perceptions of the Federal government.

We continue to be very active in the area of regulatory reform. Regulatory reforms are a result of implementation of directives issued in May 1982 by the Presidential Task Force on Regulatory Relief. The overall objective of Corps 404 regulatory reform is to provide the public with a program that offers applicants a fair, balanced, and prompt response while maintaining environmental safeguards. We are ever conscious of the goal of the Clean Water Act to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Most of our reforms have had positive impacts on the environment as well as on the regulated public. For example, the program is now more predictable and less burdensome on the regulated public. This reduction in delays and red tape has resulted in increased voluntary compliance. Increased compliance leads to an increase in the extent of responsible environmental management, that is, fewer potential environmental modifications escape review.

Another example of the positive environmental effects of our reforms involves the general permit program. This program, which has been greatly expanded since 1981, allows projects with minimal environmental impacts to

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proceed without individual review. General permits are issued on a nationwide, regional, and state or local level after careful review and comment by the general public and interested environmental groups and agencies. The positive environmental aspects of the general permit program are a result of shifting staff time and effort from minor activities to controversial projects which may involve greater impacts on the environment. Also, applicants may reduce the scope of their projects, and thereby the environmental impacts, to meet the specifications of the general permit. This is advantageous to applicants because it facilitates immediate approval and authority to proceed with the project.

This spring, we plan to publish final regulations which consolidate most of the reforms implemented to this point. This consolidated rule will include such reforms as the nationwide general permit program that authorizes tens of thousands of activities per year without significant environmental impacts.

Notwithstanding our existing success with reforms, we will continue to pursue rigorously some unfinished reforms such as simplifying and clarifying the 404(b)(1) guidelines with which each project must comply and simplifying the 404 state transfer regulations to encourage states to assume the 404 program as Congress intended. We look forward to active and productive interaction between the Army and EPA on these efforts.

CHINA

From time to time, this subcommittee has made a point of inquiring into the foreign activities of the Army Corps of Engineers. This afternoon I would like to bring you up to date on cooperative activities with the People's Republic of China (PRC). For almost two decades, each President has emphasized the importance to our foreign policy and national security goals of

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improved relationships with China. Pursuant to the 1979 Science and Technology Agreement between the PRC and the United States, there have been 26 Protocols executed between various Chinese ministries and agencies of the United States Government. At the present time, the Department of the Army, under the guidance of the Department of State and with the oversight of the Office of Management and Budget, is in the final stages of developing a Protocol on scientific and technological cooperation and laboratory activities in the field of water resources with the Ministry of Water Resources and Electric Power of the PRC. In addition, an Annex to an existing Protocol on the Science and Technology of Transportation between the U. S. Department of Transportation and the PRC Ministry of Communications, which would facilitate scientific and technological cooperation and information exchange in the areas of ports and waterways, also is under consideration. General Heiberg and I are planning a trip this year to execute the Protocol with the Ministry of Water Resources and Electric Power and to explore further specific opportunities for mutually beneficial scientific and technological cooperation.

I want to emphasize to this subcommittee that we have been proceeding in a very deliberate, cautious, and exploratory manner in our dealings with the Chinese water resources agencies. It is a long-term, mutually beneficial relationship that we seek, one which must be fully consistent with United States foreign policy and national security goals. Our limited contacts to date indicate that there are a variety of specific research areas in which the Corps can benefit from Chinese work and previously collected data in water resources. Based on the Corps' long and distinguished experience in water resources development, the Department of the Army has a unique opportunity to

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participate in scientific and technological cooperation and information exchanges with the Chinese Government.

CONCLUSION

In developing the FY 1987 Civil Works Budget, Mr. Chairman, it has become abundantly clear that the Army Civil Works Program is at a crossroads. We are presented with the opportunity either to go forward in a positive way in the face of severe budget restrictions or we can risk sliding backward at a time when the Nation needs a good sound water resource development program. As so often in the past, this subcommittee will play a critical part in the decision. The budget you are about to consider is one which is in tune with today's budgetary realities. I am confident it will receive your careful attention and, I trust, will merit your support.

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TABLE II
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS - CIVIL WORKS
FY 1987 RECOMMENDED NEW CONSTRUCTION STARTS
(DOLLARS IN MILLIONS)

PROJECT TYPE/NAME	STATE	FY 1987 BUDGET REQUEST	TOTAL FIRST COST	FEDERAL FINANCING TRAD.	FEDERAL FINANCING PROP.	LOCAL FINANCING TRAD.	LOCAL FINANCING PROP.
Flood Control							
AGANA RIVER *	GUAM	0.70	5.15	4.14	3.86	1.01	1.29
FOURCHE BAYOU *	AR	0.76	29.60	19.71	18.26	9.89	11.34
GREAT BEND	KS	2.60	59.30	46.50	43.53	12.80	15.77
HALSTEAD *	KS	1.10	7.75	7.00	5.81	0.75	1.94
LAKE WICHITA,HOLLIDAY CREEK *	TX	0.70	43.10	32.00	30.00	11.10	13.10
MT. ST. HELENS SED. CONTROL	WA	17.00	169.00	148.00	**148.00 **	21.00	21.00
PAJARO RIVER	CA	0.50	5.84	2.10	1.82	3.74	4.02
REDBANK AND FANCHER CREEKS *	CA	2.00	73.50	61.30	55.20	12.20	18.30
REVERE BEACH	MA	0.70	8.08	4.04	5.17	4.04	2.91
SO. FORK ZUMBRO R.,ROCHESTER *	MN	1.40	70.90	59.87	53.00	11.03	17.90
SOUTH QUINCY D&LD *	IL	1.00	12.90	12.60	9.67	0.30	3.23
SOWASHEE CREEK *	MS	0.90	19.00	12.20	11.25	6.80	7.75
THREEMILE CREEK *	AL	2.30	20.45	10.49	9.47	9.96	10.98
SUBTOTAL		31.66	524.57	419.95	395.04	104.62	129.53
Commercial Ports							
DELAWARE RIVER VIC. OF CAMDEN	NJ	2.65	4.76	4.41	3.31	0.35	1.45
JACKSONVILLE HBR., MILL COVE * a/	FL	2.00	4.00	4.00	4.00	0.00	0.00
OAKLAND OUTER HARBOR *	CA	2.50	28.10	19.80	14.90	8.30	13.20
PONCE HARBOR	PR	2.00	10.35	9.77	6.36	0.58	3.99
PORTSMOUTH HARBOR *	NH&ME	3.00	19.02	19.02	12.37	0.00	6.65
SUBTOTAL		12.15	66.23	57.00	40.94	9.23	25.29
Multipurpose							
FRANCIS E. WALTER DAM MODIFICATION	PA	3.00	125.00	125.00	14.40	0.00	110.60
TOTALS FOR 19 PROJECTS		46.81	715.80	601.95	450.38	113.85	265.42
AS PERCENT OF TOTAL FIRST COST			100.0	84.1	62.9	15.9	37.1

* authorized in P.L.99-662 WRDA 86. ** as authorized in H.R. 1460.

NOTE: all costs are at 1 October 1986 price level and no inflation or escalation factors during the construction period.

a/ Mitigation of damages attributable to existing project.

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TABLE B
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS - CIVIL WORKS
FY 1987 CIVIL WORKS PROGRAM
(DOLLARS IN THOUSANDS)

APPROPRIATION TITLE	FEDERAL FUNDS				NON-FEDERAL FUNDS		
	TRUST FUNDS				RIVER AND HARBOR CONTRIBUTED FUND b/		
	INLAND WATERWAY	HARBOR a/ MAINTENANCE	GENERAL FUNDS	TOTAL FEDERAL BUDGET REQUEST	AUTHORIZED	ANCILLIARY	TOTAL PROGRAM FUNDING
GENERAL INVESTIGATIONS	-	-	127,000	127,000	9,000	-	136,000
CONSTRUCTION, GENERAL	26,000 c/	-	1,046,500	1,072,500	200,000	16,000	1,288,500
OPERATION & MAINT., GEN	-	203,000	1,217,000	1,420,000 d/	-	1,000	1,421,000
FLOOD CONTROL, MR&T	-	-	298,000	298,000	1,000	-	299,000
GENERAL EXPENSES	-	-	115,000	115,000	-	-	115,000
FLOOD CTRL. & COASTAL EMERG	-	-	25,000	25,000	-	-	25,000
REVOLVING FUND	-	-	12,000	12,000	-	-	12,000
PERMANENT APPROP.	-	-	9,000	9,000	-	-	9,000
TOTAL	26,000	203,000	2,849,500	3,078,500	210,000	17,000	3,305,500
OFFSETTING RECEIPTS							
UNDER EXISTING LAW	-	-	19,100	19,100			
PROPOSED LEGISLATION	-	203,000	-	203,000			
NET TOTAL	26,000	0	2,830,400	2,856,400			

a/ Pending legislation, if enacted in FY 1986, would result in the collection of $203 million in receipts in FY 1987, which upon appropriation from a proposed Harbor Maintence Trust Fund, would be used to reduce the O&M, General Appropriation.

b/ Authorized - The non-Federal cash contribution required under terms of existing and proposed agreements.
Ancilliary - Estimated cost of unauthorized work requested by non-Federal interests and done on a reimbursable basis.

c/ For follow-on work on the four lock and dam new construction starts included in the FY 1985 Supplemental Appropriations Act.

d/ Includes $12.5 million to be derived from the Special Recreation Use Fee account.

Mr. BEVILL. And, General Heiberg, we will hear from you now and we are always glad to hear from our Chief.

General HEIBERG. Thank you, sir.

SUMMARY OF GENERAL HEIBERG'S STATEMENT

Mr. Chairman, and members of the Subcommittee, I am glad to be here for this, my eighth scheduled meeting with you.

As Secretary Dawson noted, I will briefly highlight key points of my formal statement. The importance of the water resource development bills now under consideration by the Congress to our program cannot be overstated. Once enacted, the adjustments in financing for our program will impact on what we can do now and how effective we can be in the future. I will expand on that theme by detailing some impacts expected from those bills on the funding and directions to be taken for various activities within our program. However, I first want to compare what we have accomplished in the past with the expected near-future contributions and then provide an overview of our proposed fiscal year 1987 program.

I will also discuss the impact of the deficit reduction act on our program. A table summarizing the funding levels of the individual appropriation titles for the period fiscal year 1985-1987 inclusive is attached to my formal statement for your reference.

And finally I will discuss the benefits of the cost sharing agreements reached between the Administration and the Senate majority leadership.

CONTRIBUTIONS OF THE CORPS PROGRAM

Mr. Chairman, I will just take a moment to review for you the significant contributions of the Corps program to the development and conservation of this nation's precious natural resources.

COMMERCIAL NAVIGATION

During the first half of this century we were primarily engaged in the development of the nation's inland waterway systems, chiefly on the Mississippi and Ohio Rivers and along the eastern seaboard and coastal ports.

These systems have proven to be a tremendous boon. The nation's waterborne commerce has expanded far beyond our projections at the time the port and inland facilities were built. In 1983, 1.7 billion tons of waterborne commerce, slightly more than seven tons per capita, were handled at Corps-maintained projects with over 60 percent handled at the coastal harbors, one-third on the inland and intercoastal waterways and the rest on the Great Lakes. This history of growth in waterborne commerce verifies the value of our program to the users and to the nation.

The proposed increase in the existing fuel tax will be used to help fund further waterways improvements which will help users realize still more efficiencies and savings in transport costs. I expect these future investments to focus on incremental improvements to our existing waterways. Projects like the Tennessee-Tombigbee and the Arkansas, which are completely new, are probably

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unlikely to be built. The rate of return on incremental improvements, where we have existing traffic, will quite likely be greater.

FLOOD CONTROL

After enactment of the 1936 Flood Control Act, and with your committee's leadership and assistance, the Corps started to focus on flood damage prevention as well as navigation. The new projects were designed to reduce the flood damages that were being experienced in the 1930s, the 1940s and the 1950s. Since 1945, the Corps has completed some 730 flood control projects at a cost of $7.8 billion. Over the past 10 years Corps projects prevented an average of $10 billion in damages per year, each year more than the total cost of building those projects. The quality of life and economic certainty accompanying those projects we cannot put a dollar value on, just as we cannot the lives saved.

Facts such as these give us confidence that there are sponsors willing and able to finance a greater share of project costs, particularly of our local protection projects.

WATER SUPPLY AND POWER

During the 1950 to 1970 time period we started emphasizing water supply storage and hydropower at Corps projects. We now have almost eight million acre-feet of municipal and industrial water supply storage space in 105 of our lakes, and there are seven more reservoirs under construction that will increase the nation's water supply inventory by 1.4 million acre-feet. That is enough water for nearly 10 million households.

As Secretary Dawson pointed out, we have been successful in marketing unsold water storage to ensure its best use. The success is evidence of both the value to the users and the foresight of this committee in funding these multi-purpose projects over time.

By the end of fiscal year 1984, we also were operating 70 hydropower projects with a total installed generating capacity of almost 20,000 megawatts. These projects produce about one-third of the U.S. hydropower or four percent of the total U.S. electric energy and, of course, that is clean power.

NATURAL RESOURCES

These facts are impressive, but so is our natural resources management program. Last year 50 million fishlings were released into the waters of the Pacific Northwest from fish hatcheries constructed and funded by the Corps. We manage over 450 projects with some nine million acres of the nation's prime water-oriented recreation opportunities. Those projects accommodated about 4.4 billion visits in the last decade or 20 visits for every one of our citizens.

Our projects have set aside over three million acres for fish and wildlife management and over one million acres of land are allocated to forest management. And we have turned down numerous requests of developers to develop or otherwise destroy prime wetlands, one of the nation's most precious natural resources.

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EMERGENCY ASSISTANCE

Another important Corps contribution is the assistance and services we provide our citizens after natural disasters. Not many outside this committee and a few federal and state agencies are very aware of our role in helping our neighbors.

During the last calendar year, the Corps projects continued their contributions to our nation's economy by preventing over $11 billion in flood damages. Most of the damges prevented were in Indiana, Illinois, Ohio, Louisiana, Mississippi, Pennsylvania and West Virginia. During the November floods in Pennsylvania and West Virginia, which were the most expensive disasters of the year in the U.S., Corps projects prevented about $202 million worth of damage in Pennsylvania and $218 million in West Virginia. Major damages also were alleviated in Texas and Wyoming from flash flooding. Again, these gains reinforced the worth of flood control and the practicality of expecting non-federal interests to contribute a greater share of project costs.

However, this was the year of the hurricane. Six significant hurricanes struck the nation, doing more than three billion dollars in damages in the South and East. Millions of people were evacuated, some three or four times in one year. In response to these damaging storms, the Corps has committed about $1 million and over 2,000 mandays of effort for emergency operations and rehabilitation of damaged flood control projects under Public Law 84-99. Our work, in support of FEMA's Public Law 93-288 authority, has included preliminary damage assessments, disaster recovery reports and debris removal operations. Through the end of December, over 10,000 mandays of effort and $6 million in FEMA funds had been committed to accomplish these tasks. During this same period we have accomplished advance measures projects on the Great Lakes and continued to repair flood control projects damaged by floods last winter and spring. These activities have required the commitment of over $10 million under Public Law 84-99 and nearly 6,000 mandays of effort. These recovery efforts continue as we prepare for the next flood season.

FUTURE OF CORPS PROGRAM

But that is all history. Today projected deficits are forcing a reevaluation of federal spending. With that thought in mind, I believe that if the Corps programs are to continue to serve the nation in the future as well as they have in the past, the responsibility for funding this program will need to be modified and the nonfederal share increased. Since such legislation making the necessary modifications is now under consideration, we in the Corps are anxious to see it enacted so that we can get on with the business of implementing those water resource projects which provide needed national benefits.

FUTURE WORKLOAD

Over the next five to ten years most of our regular construction program will be concentrated on those projects funded by the fiscal year 1985 supplemental and the fiscal year 1987 new starts. In ad-

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dition, we will be working on some of the projects which have been funded under the preconstruction planning and engineering program over the last four years.

These projects are reflective of the country's current needs; many are projects recommended for implementation in feasibility studies completed during the ten years following the last major authorization act. It is rewarding to know that our projects contribute to the economic and environmental well-being of our country; that, once completed, the projects trigger benefits beyond the cost of implementation; and that skilled resource management results in gains other than the planned vendible outputs.

And I am happy to say that the Administration shares in our pride and sense of mission. I believe the fiscal year 1987 budget which the President has submitted reinforces the commitment to the programs and to the cost sharing and user fee legislation currently under consideration by the Congress.

FY 1987 PROGRAM

The budget request for the fiscal year 1987 Civil Works Program amounts to almost $3.1 billion in federal funds. As Mr. Dawson said, nonfederal contributions under terms of existing and proposed cost sharing agreements will be $227 million, making the total Corps program just over $3.3 billion. Assuming enactment of the pending cost sharing legislation this year, a subsequent budget transmission will propose appropriation of some $200 million in anticipated new receipts and reducing the appropriations funded by general revenue to $2.9 billion.

CONSTRUCTION, GENERAL ACCOUNT

As Secretary Dawson also noted, the fiscal year 1987 budget request for Construction, General, is $1.05 billion and, reflecting increased cost sharing, is to be augmented by $26 million in appropriations from the Inland Waterways Trust Fund and $216 million in nonfederal contributions. Follow-on funding of $230 million is included for the projects started by the fiscal year 1985 Supplemental Appropriation. The budgeted amount will permit us to initiate 19 new construction starts and maintain schedules on all ongoing construction projects and activities funded under this account.

I might note that the request of $48 million for the Continuing Authorities program is premised on implementation of the same type of cost sharing proposals as are being applied to the regularly authorized projects. And some $93 million in the budget is for improvements of ports and inland waterways and, consequently, contingent on enactment of legislation.

OPERATION AND MAINTENANCE, GENERAL

The fiscal year 1987 request for work under the Operation and Maintenance, General, account is $1.42 billion. This is an increase of about $100 million above last year. The increase is mostly attributable to activities and new projects coming on line or becoming more fully operational. As I already indicatd, a subsequent transmittal will propose appropriation of receipts from a new trust fund

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which would be established under pending legislation to help defray costs for the operation and maintenance of our port projects. This transmittal will request appropriation of $203 million in estimated receipts and an equal reduction in the Operation and Maintenance, General request to just over $1.2 billion, a level below that appropriated for fiscal year 1985.

For your information, the fiscal year 1987 program includes $420 million for dredging, which is basically the same level as that scheduled for accomplishment in fiscal year 1986. And we are proposing again to add three projects to the three projects already funded for caretaker status because their commercial tonnage simply will not justify the continuation of regular operation and maintenance activities. This action will save approximately $13 million for all six locks.

As you know, some of our projects are beginning to grey at the temples. Accordingly, we are budgeting some $53 million for the major rehabilitation and/or modernization of our projects. Included is $40 million for ongoing work and $15 million for modernization and rehabilitation of three lock and dam projects, two highway bridges and one reservoir project. As an adjunct to our major rehabilitation program, we are continuing the funding of a research program addressing the problems associated with the repair, evaluation, maintenance and rehabilitation of existing structures. The goal of this research program is to develop improved or new techniques, capabilities and even materials to achieve savings and efficiencies that will greatly reduce our expenditures for the major rehabilitation of our projects.

MISSISSIPPI RIVER AND TRIBUTARIES ACCOUNT

For the Mississippi River and Tributaries Program (MR&T), the $298 million budget request represents a decrease of almost $17 million from the fiscal year 1986 appropriations. Essentially, the decrease is attributable to a reduction in the funding requirements for the Old River Auxiliary Control Structure which should be completed this November. The overall funding request is sufficient for normal operation and maintenance of the MR&T project and for continued survey and construction schedules consistent with prior year performance and historic funding experience. While there are no fiscal year 1987 new starts, the MR&T budget request does include follow-on funding for two of the 41 new construction starts funded by Public Law 99-88.

FY 1986 DEFICIT REDUCTIONS

I will now shift focus for a few moments to our fiscal year 1986 program and the reductions we will achieve under the Gramm-Rudman-Hollings legislation. We in the Corps recognize that the nation needs to get the growing deficit under control and we are ready to do our part.

That is not to say that the reductions will be painlessly integrated—they will not be, but we feel that the management flexibility you provided in the 1986 Continuing Resolution will allow us to be responsive to the Act without damaging our program. Let me add that the current authorizing legislation will be a big help. The Ad-

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ministration's foresight in seeking other funding sources for these projects, once legislatively implemented, will allow our program to proceed on schedule at reduced federal cost.

IMPACT OF REDUCTION

The fiscal year 1986 reduction in new budget authority is almost $122 million. As applied to the Civil Works Program, we will reduce by 4.3 percent the funds available to every program, project and activity we are working on. And while the reduction will have an impact on virtually every project, study and activity, it is not of such a significant nature so as to create insurmountable problems. As can be expected, we will have some delays and not all things which have been programmed will get accomplished, at least to the extent scheduled. But all in all, I believe we can manage these reductions so that there will be little noticeable disruption to the program nationwide. Assuming a supplemental is submitted and the Congress agrees with our request for a minimal transfer of funds to the General Expenses account, we can avoid layoffs or furloughs at this time.

As I said, the reductions in fiscal year 1986 will not prevent us from getting the basic job done. Anything that needs to get done will get done. That is our commitment and I do not hesitate stating it. But where the reduction in funds to a specific project results in a ridiculous situation such as having funds to dredge most but not all of the channel, we will reprogram money or take other prudent management actions.

FUTURE DIRECTIONS

Despite the reduction in funds, I am optimistic about the future. Cost sharing legislation will provide the framework for developing the necessary partnership arrangements with the sponsors of our future projects. Those same reforms will allow us to proceed with this important national program at a fairly constant level while reducing federal expenditures.

We believe that increased non-federal cost sharing has benefits which go beyond reducing federal expenditures. For instance, I believe the planned projects will more closely reflect the needs of the specific sponsor. The change also will cause a shift to smaller, more easily financed projects and the phased construction of larger projects.

Along with the two-phase study process initiated in fiscal year 1984, cost sharing of the feasibility phase study will assure a more effective participatory role by the sponsors, focus the evaluation of alternatives on those that are tailored to the sponsor's financial and institutional capabilities and produce authorized plans that can be implemented with the full support and participation of the sponsor.

COST SHARING IMPACT ON CONSTRUCTION

During the next few years we expect our construction program will be made up mostly of smaller scale flood control and commercial navigation projects. Primary development of new water supply

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and hydropower facilities may shift to the private sector unless incorporated into a multi-purpose project. However, the Corps will still be the construction agent for additional water supply storage or power facilities that are added to existing Corps projects.

Both the share of project costs and cost of financing will affect how fast the project can be implemented. The ability to fully fund a project or to do it in stages stems from such institutional constraints on the sponsor as debt ceilings and the willingness of the beneficiaries to assume additional costs. The willingness to assume additional debts will depend on the potential for change in the available income from local, state and federal sources and the attitude of local interests toward raising additional revenue from increased taxes or sales of assets.

Local concerns will now more closely parallel those of the federal government. Both entities will be struggling to balance continuing and new commitments to resource development and other program priorities against a constrained revenue outlook. Those strong benefits I spoke of earlier do provide a basis for cost sharing adjustments that allow our program to thrive even as we face severe budget constraints. However, if we do not get those adjustments in the form of legislation, I am deeply concerned that we will turn into an operations, maintenance, and rehabilitation organization rather than concentrating more on new starts which this nation needs.

Mr. Chairman, that concludes my statement and I will be pleased to respond to any questions you may have.

Mr. BEVILL. Thank you for a very good statement.

[The statement of General E. R. Heiberg III follows:]

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DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS

STATEMENT OF LT. GENERAL E. R. HEIBERG III
CHIEF OF ENGINEERS
U. S. ARMY CORPS OF ENGINEERS
BEFORE THE SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT
COMMITTEE ON APPROPRIATIONS
HOUSE OF REPRESENTATIVES
ON THE FY 1987 CIVIL WORKS BUDGET

FEBRUARY 18, 1986

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STATEMENT OF LT. GENERAL E. R. HEIBERG III
CHIEF OF ENGINEERS
U. S. ARMY CORPS OF ENGINEERS
BEFORE THE SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT
COMMITTEE ON APPROPRIATIONS
ON THE FISCAL YEAR 1987 CIVIL WORKS BUDGET

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

INTRODUCTION

Mr. Dawson, the Assistant Secretary, has focused on the importance of the Water Resource Development bills, now under consideration by the Congress, to our program. I will expand on that theme by detailing some of the positive impacts that those bills should have on the various phases of our program. However, I first want to compare what we have accomplished in the past with the expected near-future contributions and then provide more detailed information on our proposed FY 1987 program. I also will discuss the effects of the deficit reduction act. A table summarizing the funding levels of the individual appropriation titles for the period FY 1985-1987 inclusive, is attached for the Subcommittee's reference. It includes the sequestrations of the FY 1986 appropriations submitted by the Administration. Finally, I will discuss the future of our program once the new cost sharing has been enacted into law.

CONTRIBUTIONS OF THE CIVIL WORKS PROGRAM

Navigation and Flood Control

The Civil Works program of the Corps has made significant contributions to the development and conservation of this nation's natural resources. During the period 1920-1960 we were primarily engaged in the development of

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the Inland Waterway System on the Mississippi and Ohio Rivers and the Intracoastal Waterways. Expansion of this system continued with new locks and dams on the Columbia and Arkansas Rivers during 1940 through 1970. For those segments of the system that have been in operation for 20 years the expansion of the nation's economy has resulted in waterborne commerce far beyond our projections at the time they were built. In 1983, with 1.7 billion tons of waterborne commerce, more than 7 tons for every U. S. citizen were handled at Corps projects. Of this amount, over 60 percent (over 1 billion tons) was handled at coastal harbors, one-third (about 560 million tons) on the inland and intracoastal waterway system, and the rest (about 130 million tons) on the Great Lakes. The principal commodities moved were petroleum products, coal, iron, and steel, which together accounted for almost 2/3 (62 percent) of the total. Over 150 million tons of traffic moved on the Ohio River System alone in 1983, and preliminary projections indicate inland waterways tonnage in 1985 will be the highest ever recorded. I wanted you to have those impressive numbers, well beyond (in the aggregrate) what we had originally forecasted. The history of growth on any waterway segment is a common story of slow starts, and a strong finish! The Arkansas (McClellan-Kerr) waterway, after only 13 years of operation, has already reached 85 percent of its ultimately projected tonnage. Right on course. This growth in waterway tonnage verifies the value of the waterways to the users. The proposed increase in the existing fuel tax will be used to help fund further improvements to the waterways; improvement that will help the users realize still more efficiencies and savings in transportation costs. We expect these future investments to focus on incremental improvements to existing segments of the waterway system. Projects like the Tennessee-Tombigbee and the Arkansas which were completely new waterways with no existing commerce and traffic patterns are unlikely to be built. The rate of return (time value of money) on the incremental improvements will be greater.

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After the Congress passed the 1936 Flood Control Act, the Corps started to focus on flood damage prevention as well as navigation. In the beginning the new flood control projects were designed to reduce the urban and agricultural damages that were being experienced in the 30's, 40's and 50's. Since 1945, the Corps has completed some 730 flood control projects at a cost of $7.8 billion. In the period FY 1975-1984, Corps projects prevented nearly $100 billion in flood damages, an average of $10 billion per year. Compare that $10 billion annual savings with the $7.8 billion total cost! Now that is a story I wish someone would focus on . . . it is facts such as this that gives us confidence that the sponsors will be willing and able to finance a greater share of our local protection projects.

Water Supply and Power

During the 1950-1970 time period we began emphasizing provision of water supply storage and the generation of hydropower at Corps projects. We now have nearly 8 million acre-feet of municipal and industrial water supply storage space in 105 lake projects, all of which are operational. There are seven more dams now under construction that will increase the water supply inventory by 1.4 million acre-feet, another 1/6. The total storage of over 9 million acre-feet represents an investment cost just under $1.2 billion, but it is enough water to supply the annual water needs of over 10 million households. As Secretary Dawson pointed out, we have been successful in aggressively marketing the unsold water supply storage to assure its best use. The success is evidence of both the value to the users and the foresight of the Subcommittee in funding these multi-purpose projects over time.

By the end of FY 1984, we also had 70 hydropower projects in operation, with a total installed generating capacity of almost 20 thousand megawatts. Those Corps projects produce 30 percent of the hydropower produced in the U.S., making the Army the largest producer of hydropower.

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These facts are impressive, but our natural resources management program also is one in which we can take pride. We manage more than 450 projects with a total of over 9 million acres of land and water. These projects offer excellent water-oriented recreation opportunities and in 1985, accommodated over 500 million recreation days of use, which equates to an average of two visits a year by every citizen. While this level of visitation is truly remarkable, revenues collected under the Land and Water Conservation Act of 1965, as amended, amounted to only some 10 percent of our operational costs for FY 1985. Over 3 million acres of the land and water at our projects are allocated to fish and wildlife management and over 1 million acres of land are allocated to forest management. We have set aside specific project areas which are managed for spawning and nursery areas for fish and shellfish, for habitat for both game and non-game wildlife and for preservation of endangered and threatened species. Also, in 1985, over 50 million juvenile salmon, steelhead, and trout were released into the waters of the Pacific Northwest from hatcheries constructed and funded by the Corps of Engineers.

FLOOD DAMAGE PREVENTION AND EMERGENCY RESPONSE ACTIVITIES

Another important Corps contribution is the assistance and services we provide our citizens following many of the natural disasters that take place in various regions of the Nation. Our expertise in this type of work is recognized worldwide. When asked, we provide assistance to other nations, such as to Mexico after the earthquake which occurred last fall.

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Flood Damage Prevention

During calendar year 1985 Corps projects prevented $10.8 billion in flood damages. Most of the damages prevented were in Indiana, Illinois, Ohio, Louisiana and Mississippi. Major damage also occurred in Texas and Wyoming due to flash flooding. Almost every state in the Upper Midwest suffered with problems from severe storms and widespread flooding. For example, severe flooding in the Wabash River basin (Indiana and Illinois) struck late last winter. Corps projects in the basin prevented an estimated $110 million in damages. The flood wall at Vincennes, Indiana, alone prevented $50 million in damages. Record to near-record flooding also occurred along portions of the Illinois River and the Mississippi River at Chester and Thebes, Illinois. Once again, the Lower Mississippi River Valley projects worked well as over $9.5 billion in flood damages were prevented in Louisiana and Mississippi. But "damages prevented" do not tell the whole story, as this Committee knows. The positive effects of reliable flood protection on the health and welfare of the cities and the Nation is hard to measure, but they are there. Again these gains reinforce the worth of flood control and the practicality of expecting non-Federal interests to contribute an increased share of costs for such projects.

Flood Emergency and Disaster Response Activities

In calendar year 1985, the Corps provided technical assistance, and flood fighting equipment and materials to Federal, state, and local entities in response to flood problems on the Mississippi River mainstream and tributaries (February and March 1985) and across the midwest from the Lower Great Lakes to the Ohio River Valley (January-May 1985). Work on the Great Lakes included initiation of several Advance Measures projects in response to record elevations for several of the lakes. Then late this fall, record flooding impacted in several major river basins in West Virginia, Pennsylvania, Virginia, and Maryland. Presidential Disaster Declarations were made for

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small portions of Virginia and Pennsylvania, and 29 counties in West Virginia, where the majority of damages occurred. The Corps responded with extensive manpower to assist Federal, state, and local flood fight and recovery efforts. As a result of the West Virginia declaration, the Corps has undertaken nearly $6 million worth of contracting and other support services under FEMA's authority in providing disaster relief. Under the Corps PL 84-99 authority, a quarter million dollars in emergency response and recovery activities will be accomplished. In addition, the Corps immediately undertook efforts to reopen navigation along the Monongahela River; many sunken barges had made several of the locks and dams inoperable. Five Corps districts from three divisions were involved in this effort.

However, this was the year of the hurricane. Six significant hurricanes struck the Nation, doing more than $3 billion in damages in the south and east. Hurricane Bob moved across Florida, as a tropical storm, then hit South Carolina with 75 mph winds on June 25, killing one and causing $20 million in damage. Hurricane Danny hit Louisiana on August 15 with winds up to 100 mph, and later spawned tornadoes in Alabama. Danny caused more than $50 million in damage and killed three. Hurricane Elena battered the Gulf Coast for several days before hitting Mississippi on September 2 with 125 mph winds. Over 1 1/2 million people were evacuated, 500,000 of them twice. Damages exceeded $1 billion and three people were killed. Hurricane Gloria swept the east coast from North Carolina to Maine, on September 26-27. Nearly 1 million people were evacuated. There were six deaths and damages were more than $1 billion. Hurricane Juan hit the Louisiana coast at the end of October, causing major flooding throughout several of the lower parishes. The Corps provided assistance to local interests in keeping pumping operations and hurricane protection works operational. The remnants of Juan drifted to the northeast and were a significant factor in the record flooding which developed

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in West Virginia, Maryland, Pennsylvania, and Virginia, in early November. The estimated damages from this event approached $1 billion. Hurricane Kate hit the Florida panhandle in late November, causing four deaths and extensive power outages.

In response to these damaging storms, the Corps has committed about $1 million and over 2,000 mandays of effort for emergency operations and rehabilitation of damaged flood control projects under Public Law 84-99. Our work, in support of FEMA's Public Law 93-288 authority, has included preliminary damage assessments, disaster recovery reports, and debris removal operations. Through the end of December, over 10,000 mandays of effort and $6 million in FEMA funds had been committed to accomplish these tasks. During this same period, we have accomplished Advance Measures projects on the Great Lakes and continued to repair flood control projects damaged by floods last winter and spring. These activities have required the commitment of over $10 million under Public Law 84-99 and nearly 6,000 mandays of effort. These recovery efforts continue as we prepare for the next flood season.

As I mentioned earlier the Corps also was an active participant in the clean up after the earthquake which caused widespread damage and appalling human suffering to the people in Mexico City. The Corps of Engineers was asked by the State Department to provide two types of advisory assistance to the earthquake recovery effort. The first was advice in the use of construction equipment and the second was on geotechnical evaluations. With respect to the construction effort, the Corps of Engineers was represented on damage assessment teams organized under the direction of the State Department. The teams assessed the requirements for rubble removal, demolition of damaged structures, and the need for additional U. S. Government

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resources. In addition to the construction advice, the Corps of Engineers participated on a U. S. National Academy of Sciences team evaluating the overall impacts of the earthquake.

NEAR FUTURE CONTRIBUTIONS

Source of Future Workload

Over the next five to ten years, most of our regular construction program will be concentrated on those projects funded by the FY85 Supplemental and the 19 new starts included in the Army's FY 1987 budget request. In addition to these projects, we will, among other things, be working on some of the projects which have been funded under the preconstruction planning and engineering program during the last 4 years; projects that could be implemented once authorized and ready for construction.

Contribution

These projects are reflective of the country's current needs. Many are projects recommended for implementation in feasibility studies completed during the 10 years following the last major authorization act. These projects will provide the nation an estimated $800 million in annual flood damage prevention benefits, reduce the nation's transportation costs by $3.4 billion, and provide some $2.3 million acre feet of storage for Municipal and Industrial water supply.

Most of the projects are for local flood protection. The investments for flood control are comparatively small on an individual project basis, but significant from a total Federal and non-Federal investment standpoint. Improvements to existing coastal harbors and certain locks and dams on the Inland Waterways are much smaller in project numbers but represent the largest total investment facing both the Federal and non-Federal interests. Cost

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sharing of the capital costs over time has to happen, if Federal expenditures are to be kept within a realistic budgetary framework.

FISCAL YEAR 1987 PROGRAM

FY 1987 Program and Budget Request

As you can tell, I am proud to be associated with this meaningful program. It is rewarding to know that our projects contribute to the economic and environmental well being of the country. Once completed, the projects trigger benefits beyond the cost of implementation since effective resource management results in gains other than the authorized project outputs. And, I am happy to reiterate Secretary Dawson's view that the Administration shares in that pride and sense of mission. I believe the FY 1987 budget which the President has submitted reinforces the past commitments to the program and to the cost sharing legislation under consideration in the Congress.

The FY 1987 budget request for the Civil Works programs amounts to almost $3.1 billion in Federal Funds. Non-Federal contributions under terms of existing and proposed cost sharing agreements will amount to $227 million, resulting in the overall funding of the Corps program to be just over $3.3 billion. I will cover a few of the budget highlights at this time. Additional information on the budget is provided in the Detailed Summary which also is being submitted for the record.

Construction, General

The FY 1987 budget request for Construction, General is slightly over $1.07 billion of which $26 million would be appropriated from the Inland Waterways Trust Fund. This is only $100 million more than the FY 1986 appropriation and includes follow on funding of $230 million for 38 of the

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41 new construction starts included in the FY 1985 Supplemental Appropriation Act (PL 99-88) but not funded in FY 1986. The budget also includes funds for 19 new construction starts and other new work such as dam safety assurance projects which involve increasing the existing spillway capacity or modifications based on seismic considerations.

We are also requesting $48 million under the Construction, General account for the Continuing Authorities Program. This request reflects application of the same type of cost-sharing proposals being applied to the regularly authorized projects. Study cost sharing on a 50-50 basis will be applied to the detailed project studies phase of the flood control, navigation, and beach erosion control authorities. The initial appraisal and reconnaissance phases will continue to be conducted at full Federal expense. Sharing of a project's capital costs generally is comparable to that being proposed for regularly authorized projects, based on output.

Operation and Maintenance

The FY 1987 request for work under the Operation and Maintenance, General account is $1.42 billion. This is only $100 million more than the level of appropriations for the last several years. Legislation is pending that, if enacted in FY 1986, would generate sufficient fees in FY 1987 to offset up to 40 percent of the costs to maintain our coastal and Great Lakes harbors. The Administration proposes that the collected funds be transferred from a Harbor Maintenance Trust Fund to the Operation and Maintenance, General account. This would permit an equal reduction, now estimated at $203 million, in general funds required for this account so that the net appropriation would total some $1.2 billion or some $100 million less than appropriated during the last two years. The program request basically provides sufficient funds for

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the continued operation and maintenance of our projects. This includes $420 million for dredging, basically the same level as that scheduled for accomplishment in FY 1986. There are small program increases as the result of maintenance requirements (other than dredging) for the Gulf Intracoastal Waterway, on the Kanawha, Mississippi, Monongahela, and Ohio Rivers and at Black Rock Channel/Tonawanda and the Chicago Harbors. We again are proposing to increase the number of projects in caretaker status to six. Three projects already are being funded at the caretaker level because their commercial tonnage does not justify the continuation of regular operation and maintenance activities.

With the increased awareness of the need to evaluate and repair older structures, we have included some $53.2 million in this account for the major rehabilitation or replacement of our projects. This includes follow-on funding required for the major rehabilitation of two harbors, three locks and dams on the Illinois Waterway and one lock and dam on the Mississippi River and $14.5 million is for new starts on eight lock and dam projects and two bridges. As an adjunct to our major rehabilitation program, we are continuing a major research program addressing the problems associated with the repair, evaluation, maintenance and rehabilitation of existing structures. The goal of this research program is to develop improved or new techniques, capabilities, and even materials to achieve savings and efficiencies that will greatly reduce our expenditures for the major rehabilitation of our projects. Budgeted in FY 1987 for the fourth year of this six year research program is about $7.8 million. I anticipate we will get a number of dollars back for each of those research dollars.

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The Corps National Emergency Preparedness Program, for which $13.5 million is budgeted under this account, encompasses emergency planning functions beyond the expected military support missions for mobilization and readiness. Activities involved are responsive to needs resulting from national emergencies -- for example, national water and support resource shortages, catastrophic earthquake, nuclear power plant accident and others. This Corps program provides a construction support capability both stateside and overseas that promotes a credible national defense. The program also provides a Civil Works capability that is equally important to the Nation for response to and recovery from other national emergencies. Key to both of these missions is the availability of personnel capable of rapidly concentrating their efforts to support the military and civil sectors during a national emergency. Executive Order 11490, as amended, provides authority to undertake planning for Continuity of Operations of the Corps of Engineers, including development of emergency relocation sites, emergency communications, alternate files and other contingency requirements. I want to reemphasize that this program helps us to be ready to provide nationwide engineering, construction, and real estate assistance during any national or regional emergency requiring federal repsonse.

Flood Control, Mississippi River and Tributaries (MR&T)

For the MR&T program, the $298 million budget request represents a decrease of almost $17 million from the FY 1986 appropriations. Essentially, the decrease reflects a reduction in the funding requirements for the Old River Auxiliary Control Structure. Construction there is scheduled for completion late this calendar year. The overall funding request is sufficient for normal operation and maintenance of the MR&T project, and for continued survey and construction schedules consistent with prior year performance and historic funding experience. While there are no FY 1987 new starts, the MR&T

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budget request does include follow on funding of $1.3 million for two of the 41 new construction starts funded by PL 99-88.

General Investigations

The FY 1987 budget request for the General Investigation program is $127 million, about $2 million less than that appropriated for FY 1986. Last year's appropriation reflected the requirement for non-Federal interests to cost-share the feasibility phase study. However, implementing the cost-sharing on 15 March 1986 rather than 1 October 1985 requires reprogramming of the FY 1986 funds for some feasibility phase studies in order to maintain reasonable schedules. The 209 studies and projects being budgeted under the survey and preconstruction planning and engineering programs in FY 1987 is only slightly less than the number (227) now scheduled for work in FY 1986. Some are now being funded under the Construction, General account by virture of PL 99-88.

A new line item has been added to the General Investigations account. Under the program, Cooperation With Other Federal Agencies, States, Non-Federal Interests, and Foreign Governments, an amount of $250,000 is being requested for expenses associated with, and which will be incurred as a result of, certain cooperative efforts with foreign governments. Over the course of many years, the Corps has provided technical advice and assistance to developing foreign nations, generally on a reimbursable basis, through various U.S. programs and agencies such as the U.S. Trade and Development Program, the U.S. Agency for International Development, or through U.S. participation in multi-national organizations such as the United Nations Development Program. In all these cases, the Corps' technical assistance and advice has been provided in order to promote the export of U. S. architectural, engineering, construction and/or related services to the host country.

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In recent years, the Corps also has been requested by various foreign governments to participate in mutually beneficial scientific and technological information exchange programs, joint research and development activities, and various other collaborative activities in water resources science and technology which improve U.S. knowledge and expertise while assisting foreign governments. Since each country that participates in these bilateral exchanges obtains benefits, each side is expected to pay the expenses incurred by its participation in these activities. This type of cooperative effort involves the People's Republic of China and other more developed countries. The Administration has endorsed the new line item funding request for expenses associated with cooperative activities that directly benefit U.S. domestic Civil Works programs. Such activities may, in the future, also lead to reimbursable technical assistance that will provide opportunities for U.S. businesses.

Perspective

As Mr. Dawson has indicated, the effort to obtain signed agreements with the sponsors of projects funded as new starts in the FY 1985 Supplemental Appropriation Act (PL 99-88) is moving ahead. Nevertheless, I am concerned over the potential hold up that could be applied to the new starts for the coastal harbors. It is not clear at this time whether the port authorities will sign an agreement without the legal authority to levy fees and collect revenues sufficient to offset the cost of bonds used to finance their share of the project costs. As Mr. Dawson has indicated, the port people are looking to implement their projects in stages. This may help them absorb their financing costs. However, the question still remains whether current revenues available to the ports are sufficient to cover the first stage of development or whether State assistance will be needed in the absence of legislation permitting the imposition of user fees.

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A similiar concern on the part of the Administration applies to the Inland Waterway system. There is an immediate need for capital improvements to the existing system. Construction new starts for four such projects was included in PL 99-88. Implementation is estimated to cost $966 million of which 50 percent or $483 million is to be appropriated from the existing Trust Fund. Four other such projects are in the study or preconstruction planning and engineering stages now. Future investment costs for these four totals $455 million. Concurrently, expenditures to rehabilitate our locks and dams continue, reflecting the age of these projects. Over the past three years, our budget request for major rehabilitation under our Operation and Maintenance program included funding of such work to the waterways system. FY 1986 appropriation included $5.3 million of a total $90.7 million investment for projects on the Upper Mississippi River. The FY 1987 budget is no exception. Some $12 million is being requested to initiate the upgrading of the electrical and mechanical facilities at four locks and dams and the structural rehabilitation of two locks and dams, all on the Mississippi River. We also are requesting almost $8 million to initiate major rehabilitation of two bridges over the Chesapeake and Delaware Canal, also part of the Inland Waterway system. Total cost of this new work is estimated at $68.5 million. Given this cost scenario, the Administration has endorsed legislation that, if enacted, will provide additional receipts to cover these and all future expenditures necessary for the planning, preconstruction planning and engineering, construction, rehabilitation and/or modification of the existing waterway projects. Accordingly, during FY 1986, we are undertaking some land acquisition, relocations and the necessary engineering and design to assure initiation of construction of the four lock and dam projects funded by PL 99-88 as soon as is feasible. However, actual construction will be contingent upon enactment of the sought-after legislation.

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DEFICIT REDUCTION FOR FISCAL YEAR 1986

I will now shift focus to our FY 1986 program and the reductions required by the Deficit Reduction legislation. We in the Corps recognize that the nation needs to get the budget deficit under control and we are ready to do our part. That is not to say that the reductions will be painlessly integrated. There will be some pain, but I feel that we have sufficient management flexibility to be responsive to the intent of both the act and our program commitments. Let me add that new authorizing legislation is absolutely essential if we are to have a strong program in the future. The Administration's efforts in seeking additional non-Federal funds for these projects, once legislatively implemented, will allow our program to proceed on schedule at reduced Federal cost.

Funding Impact

The FY 1986 reduction in new budget authority is almost $122 million. As applied to the Civil Works program, the funds made available from the FY 1986 appropriations will be reduced by 4.3 percent. And while the reduction will have an impact on virtually every project, study and activity, it is not of such a significant nature so as to create insurmountable problems. As I said, we will have some delays and not all things which have been programmed will get accomplished - at least to the extent scheduled. But all in all, I believe we can manage these reductions so that there will be little if any noticeable disruption to the program. Assuming the Congress agrees with our request and enacts a FY 1986 Supplemental approving a minimal transfer of funds to the General Expense account, we do not expect layoffs or furloughs at this time.

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The reductions in new budget authority shown in the attached table will be reflected by a reduction in the level of obligations incurred in FY 1986 and a reduction in the anticipated unobligated carryover into FY 1987. This will result in lower than anticipated outlays for FY 1986 and FY 1987.

Programming Considerations

In summary, we will slip some of the scheduled work into FY 1987 but I doubt that the public will perceive any reduction in the quality or quantity of services rendered. Certainly, anything that needs to get done, will get done. Some projects will be stretched out and some contracts slipped or deferred, but we will use our common sense to pick the appropriate work to be delayed. That's our commitment and I have no hesitation in stating it. Basically, work schedules will be followed, to the extent possible. But, where the reduction in funds to a specific project results in a ridiculous situation such as having funds to dredge only a portion of a channel, we will reprogram money.

Future Impact of Deficit Reduction Act

As is apparent from our FY 1987 budget request, we are able to continue a substantial program which includes 19 new construction starts, as well as a strong pre- and post-authorization planning program. The 1987 program is predicated, of course, on realization of the non-Federal cost sharing agreed to by the Administration and the Senate majority leadership last summer. Without enactment of authorizing legislation in accord with that agreement, we will not be able to have a reasonable construction program which will allow us to follow through on the commitments that will be generated by our cost shared preauthorization studies as well as from the many Continuation of Planning and Engineering (CP&E) studies funded in the FY 1987 budget.

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FUTURE DIRECTIONS

Implications of Cost Sharing

New cost sharing legislation will provide the framework for developing the necessary partnership arrangements with the sponsors of our future projects.

We believe that increased non-Federal cost sharing will result in projects more closely reflecting the needs of the specific sponsor, and a higher percentage of authorized projects being implemented. It should also cause a shift to smaller, more easily financed projects and the phased construction of larger projects.

Along with the two-phased study process initiated in FY 1984, cost-sharing of the feasibility phase study will assure a more effective, participatory role by the sponsors, and will cause the study effort to be focused on the evaluation of alternatives that are more affordable and more tailored to the sponsor's financial and institutional capabilities. This should produce authorized plans that can be implemented with the full support and participation of the sponsor.

The differences in the degree of cost sharing by non-Federal interests among the various project outputs reflect the extent of output vendibility, and conversely the role of the Federal Government in developing those outputs or services. During the next few years we expect the make-up of our construction program to shift to smaller scaled projects, made up mostly of flood control and commercial navigation projects.

Both the share of project costs and cost of financing will affect the speed with which a project will be implemented. The ability to fully fund a project, or to do it in stages, stems from such institutional constraints on

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the sponsor such as debt ceilings and the willingness of the beneficiaries to assume additional costs. The willingness to assume additional debts will depend on the value and ability to realize immediate benefits, the income available from local, state and Federal sources and the attitude of local interests toward raising additional revenue from increased taxes or sales of assets.

Local concerns will now more closely parallel those of the Federal Government. Both entities will be struggling to balance continuing and new commitments to resource development and other program priorities, against a constrained revenue outlook. Nonetheless, Mr. Chairman, I am very pleased that the strong benefits alluded to earlier will provide a basis for cost sharing and user fees that allow the Civil Works program to thrive even in the face of severe budgetary constraints. However, if we don't get it, I am very concerned the result will be an emphasis on operation, maintenance, and rehabilitation, rather than new starts, and we won't be able to do the kind of job the Nation needs.

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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS - CIVIL WORKS
SUMMARY OF PROGRAM AMOUNTS FOR FISCAL YEARS 1985, 1986, AND 1987
(DOLLARS IN THOUSANDS)

ACCOUNT TITLE	FY 1985 (APPROP.)	FY 1986 APPROP.	FY 1986 DEFICIT REDUCT. [a]	FY 1986 ADJUSTED BUDG. AUTH.	FY 1987 BUDGET REQUEST
General Appropriations					
General Investigations	141,400	128,972	5,494	123,478	127,000
Construction, General	955,300 [b]	919,345	39,515	879,830	1,072,500 [b]
Operation & Maint., General	1,307,600	1,319,973	56,725	1,263,248	1,420,000 [c]
Flood Control, Mississippi R. & Tribs.	321,800	314,760	13,535	301,225	298,000
General Expenses	115,000	107,000 [d]	4,601	102,399	115,000
Flood Control & Coastal Emerg.	50,000	25,000	1,075	23,925	25,000
Revolving Fund	0	7,000	301	6,699	12,000
Subtotal, Gen. Approp.	2,891,100	2,822,050	121,246	2,700,804	3,069,500 [c]
Permanent Appropriations	13,065	9,000	0	9,000	9,000
Subtotal, Fed. Budget Authority	2,904,165	2,831,050	121,246	2,709,804	3,078,500
Rivers & Harbors Contributed Funds	49,729	96,000	0	96,000	227,000
TOTAL PROGRAM	2,953,894	2,927,050	121,246	2,805,804	3,305,500

[a] Reductions are to be reflected in anticipated obligations to be incurred in FY 1986 and unobligated carryover into FY 1987. This will result in a reduction in FY 1986 outlays of $86.3 million and in FY 1987 outlays of $35.2 million.
[b] Includes $7.8 million (FY85) and $26 million (FY87) to be appropriated from Inland WW Trust Fund.
[c] Pending legislation, if enacted in FY 1986, would result in the collection of $203 million in receipts in FY 1987, which upon appropriation from a proposed Harbor Maint. Trust Fund, would be used to reduce the O&M, Gen. appropriation.
[d] Supplemental to transfer $3.0 million from O&M, General account is to be submitted by the Administration.

18 February 1986

DETAILED SUMMARY OF CIVIL WORKS PROGRAM

FISCAL YEAR 1987 BUDGET

TOTAL FISCAL YEAR 1987 CIVIL WORKS BUDGET

The FY 1987 budget request of $3.079 billion for the Civil Works Program is based on appropriation of $26 million from the existing Inland Waterways Trust Fund and $203 million from a proposed Harbor Maintenance Trust Fund, plus appropriation of $2.85 billion from general appropriation funds. This amount, together with $227 million in non-Federal contributions under terms of existing and proposed cost sharing agreements, will result in the overall funding of the Corps program of $3.306 billion.

ACTIVITIES UNDER THE GENERAL INVESTIGATIONS APPROPRIATION

Overall Request

The General Investigations budget request for FY 1987 is $127,000,000, a decrease of $1,972,000 from the FY 1986 appropriation of $128,972,000.

Surveys and Planning

Navigation, Flood Damage Prevention, Shoreline Protection, Comprehensive, and Special Studies. The budget request for these studies is $47,594,000, a decrease of $288,000 from the FY 1986 allocation of $47,882,000. This request would fund 142 studies, including 30 study completions. The budget request for surveys includes $9,956,000 as the Federal share for 51 feasibility phase studies. These feasibility phase studies are follow-ons

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to the reconnaissance phase studies that were funded in FY 1984, FY 1985, and FY 1986.

Review of Authorized Projects. The FY 1987 budget request is $669,000, an increase of $99,000 over the FY 1986 allocation. Included in the total is $245,000 to complete the restudy of three deferred projects, $424,000 to continue one and complete two reviews of completed projects, and $200,000 to complete the review of 40 projects for possible deauthorization.

Coordination Studies with Other Agencies. Our budget request of $6,750,000 is an increase of $980,000 over FY 1986 allocation. Included in this category is $2,900,000 for the programs of Special Investigations and FERC Licensing. Another major part of this request, $3,000,000, is for Planning Assistance to States, with which we will provide assistance to all 50 States, the Pacific Islands, and Puerto Rico. Our assistance will allow the States to become more effective partners in resolving water problems.

Legislative Phase I Stage of Advance Engineering and Design. Legislative Phase I projects are not authorized for construction, and require additional formulation studies of potential projects. As a part of the Phase I study process, alternative solutions recommended by the survey report plan are carefully reevaluated, and changes may be recommended. The FY 1987 budget request includes $2,935,000 to continue two studies. This is a decrease of $86,000 from the FY 1986 allocation of $3,021,000.

Advance Engineering and Design. The FY 1987 budget request for Advance Engineering and Design (AE&D) is $5,339,000, a decrease of $3,380,000 from

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the FY 1986 allocation of $8,719,000. This request would initiate two projects and continue 14 others, of which six will be completed.

Continuation of Planning and Engineering Studies. The FY 1987 budget request for Continuation of Planning and Engineering Studies is $24,553,000, a decrease of $6,732,000 from the FY 1986 allocation of $31,285,000. This request would fund 43 studies, including twelve for completion and nine new starts.

Collection and Study of Basic Data

The FY 1987 budget request of $12,840,000 is $1,285,000 greater than the $11,555,000 allocation for FY 1986. The activities which have the largest dollar amounts in this category are Flood Plain Management Services, $8,800,000, and Coastal Field Data Collection, $1,800,000. Other activities, which total $2,240,000, include Precipitation, Hydrologic, Transportation, Environmental Data, and International Waters Studies; Stream Gaging; and Scientific and Technical Information Centers.

Research and Development

The budget request for Research and Development under the General Investigations appropriation is $23,000,000, which is an increase of $3,000,000 over the FY 1986 allocation of $20,000,000. The FY 1987 request will permit progress in all research areas. Funds totaling $12,185,000, a decrease of $1,775,000 from the FY 1986 allocation of $13,960,000, are included under other appropriations for Research and Development work closely related to other activities.

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ACTIVITIES UNDER THE CONSTRUCTION, GENERAL APPROPRIATION

Overall Request

The FY 1987 budget request for Construction, General is $1,072,500,000 including $26,000,000 to be derived from the Inland Waterways Trust Fund, an increase of $153,155,000 over the FY 1986 appropriation of $919,345,000. The request contains $46,810,000 for 19 new start construction projects, one of which will also be completed. Funding of the new construction starts reflects the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority leadership.

Continuing Construction Projects

The FY 1987 budget request includes $896,887,000, including $26,000,000 to be derived from the Inland Waterways Trust Fund, to maintain schedules, insofar as possible, for 123 continuing construction projects, three reimbursement projects, and three projects authorized for engineering and design and land acquisition only. This is an increase of $85,585,000 from the FY 1986 allocation of $811,302,000. The request will permit the completion of five projects.

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Major Rehabilitation

The Major Rehabilitation program covers significant one-time structural repairs on completed projects that cost in excess of $5,000,000 for an individual project. The FY 1987 budget request includes $26,870,000, a decrease of $17,000 from the FY 1986 allocation of $26,887,000, for five continuing projects in this program. This remedial work will restore structures to an adequate operating condition, substantially increase their physical life, and permit continued effective realization of their benefits. Effective in FY 1985, new start major rehabilitation projects are budgeted under the Operation and Maintenance, General appropriation.

Dam Safety Assurance

The Dam Safety Assurance program provides for modification of completed Corps dam projects which are potential safety hazards in light of present-day engineering standards and knowledge. The FY 1987 budget request includes $34,960,000, an increase of $24,410,000 over the FY 1986 allocation of $10,550,000. Four specific projects are recommended as continuing Dam Safety Assurance projects and a total of $13,960,000 is included for them in the budget request for the applicable division. One of the continuing projects will be completed with the funds requested. Also, $21,000,000 is included in the Remaining Items budget request for Dam Safety Assurance new starts which may be approved in FY 1986 and FY 1987 as the result of studies now underway. The program will facilitate upgrading of those project features which, due to updated or changed climatic or hydrologic conditions or projections, no longer function as originally intended.

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Special Continuing Authorities

The FY 1987 budget request for the six Continuing Authorities that make up the Small Projects Program funded under Construction, General is $48,000,000, a decrease of $2,965,000 from the FY 1986 allocation of $50,965,000. Funding for construction new starts accounts for about one-third of the budget request and is mostly for responding to flood control and emergency streambank problems. The request will permit initiation and continuation of planning and construction in these programs that address relatively small commercial navigation, flood damage prevention, beach erosion control, emergency streambank and shoreline protection, snagging and clearing problems, and prevention or mitigation of shore damage attributable to Federal navigation works. Project construction cost-sharing will be consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority leadership.

Aquatic Plant Control

The FY 1987 budget request includes $8,000,000 for Aquatic Plant Control, which is a decrease of $1,000,000 from the FY 1986 allocation of $9,000,000. Noxious aquatic plants presently infest about 1 1/2 million acres of streams and lakes and have the potential to infest about 53 million acres nationwide. The budget request for the Aquatic Plant Control program includes $2,220,000 for research and development and $458,000 for planning, which are 100 percent Federally funded; and $5,322,000 for control operations, both being cost-shared 70 percent Federal and 30 percent non-Federal. Cost sharing under proposed legislation (S.1567) would require

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50 percent non-Federal participation in the operations program. The major objective is to establish effective Federal-State action to control noxious aquatic plant infestations which have significant economic or environmental impact on use of the Nation's waterways.

Employees' Compensation

The FY 1987 budget request includes $10,973,000 for costs previously paid by the Department of Labor from the Employees' Compensation Fund during the period 1 July 1984 through 30 June 1985 as the result of injury or death of employees under the jurisdiction of the Corps of Engineers civil functions. This is an increase of $332,000 over the FY 1986 allocation of $10,641,000.

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ACTIVITIES UNDER THE OPERATION AND MAINTENANCE, GENERAL APPROPRIATION

Overall Request

The Operation and Maintenance, General (O&M) recommended program for FY 1987 is $1.42 billion, an increase of $100 million from the FY 1986 appropriation of $1.32 billion. Pending legislation, if enacted in FY 1986, would result in the collection of $203 million in receipts in FY 1987, which upon appropriation from a proposed Harbor Maintenance Trust Fund, would be used to reduce the general funds required for this account to $1.22 billion, or some $100 million less than appropriated during the last two years. The Corps operates and maintains completed projects to insure that the significant public benefits of navigation, hydropower, flood control, water quality and supply, and recreation are provided, consistent with authorized project purposes and current project demands. In FY 1987, the Corps will operate and maintain 287 navigation projects, 260 flood control reservoir projects, 20 local protection projects, and 72 multiple-purpose projects with power.

Program Highlights

The FY 1987 program request of $293,557,000 for operation and maintenance of multiple-purpose power projects is an increase of $12,482,000 over the FY 1986 allocation. The FY 1987 program request of $819,136,000 provides sufficient funds for the operation and maintenance of navigation features of inland, deep-draft and shallow-draft projects. However, the competition for limited funds requires the deferral of some maintenance on lower-priority projects.

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Hydropower

As of 31 December 1985, the Corps was operating 70 projects producing hydropower. These projects have 344 generating units with an aggregate nameplate capacity of 19,969,327 kilowatts, which accounts for approximately one-fourth of the Nation's installed hydroelectric capacity. These projects also provide navigation, flood control, water quality and supply, and recreation benefits, consistent with authorized project purposes and current project demands. Last year, Corps hydropower energy production amounted to about 90 billion kilowatt-hours. The Corps' present hydropower capability constitutes approximately three-percent of the Nation's electrical power generating capacity.

Major Rehabilitation

Major Rehabilitation work which had been funded prior to FY 1985 is included in the Construction, General request. Major Rehabilitation projects initiated in FY 1985 and FY 1986 were included in the Operation and Maintenance, General budget request. The FY 1987 proposed program includes $37,900,000 to continue remedial work on five lock and dam projects, two narbor projects, and one multiple-purpose power project, and $15,290,000 to initiate work on three lock and dam projects, two highway bridges, and one reservoir project.

Recreation Management

Nearly 485 million recreation days were recorded at Corps projects during Calendar Year 1985, consistent with the role of Corps projects as a

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major source of recreation opportunities to the public. The FY 1987 program includes $129,120,000 for operation and maintenance of approximately 2,200 recreation areas, while an additional $5,838,000 is included for increased law enforcement protection in Corps-operated areas during periods of peak visitation. The FY 1987 program also includes $12,500,000 of Special Recreation Use Fees monies returned to the Corps for operation and maintenance of recreation areas, and $4,705,000 for development of Recreation Facilities at Completed Projects, which is a $1,104,000 increase over the FY 1986 allocation.

Natural Resources Management

The FY 1987 request includes $39,041,000 for Natural Resources Management at over 450 lakes and navigation pools comprising over 11 million acres, about half of which is water surface, with about 50,000 miles of shoreline. This is an increase of $4,011,000 over the FY 1986 allocation. Intensive public use requires careful management to maintain the natural resources base essential to meet all authorized project purposes. The FY 1987 request will meet mitigation requirements and basic protection of the resources base. This basic protection includes: preservation and maintenance of vegetation, soil, water, fish, wildlife, and other elements essential to the total ecological management of each project. Outlease and permit programs are integrated with specific project fish and wildlife studies and management of fish hatcheries, ladders, elevators, locks, and related facilities for passage of anadromous fish.

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Regulatory Functions

The FY 1987 budget request includes $52,937,000 for the regulatory program, which is a $3,437,000 increase over the FY 1986 allocation. Regulatory activities are conducted primarily under the authorities of three Acts: Sections 9 and 10 of the River and Harbor Act of 1899; Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972; and Section 404 of the Clean Water Act. The number of applications received for individual permits has increased slightly to 14,000 in FY 1985. Applications increased in the mid-70's, reaching a high of 21,000 applications in FY 1977. Since that time, our use of regional and nationwide permits has kept this number down by exempting the public from making formal application to the Corps in many situations. About 20,000 minor activities are now authorized each year by regional permits and more than 50,000 activities are handled by nationwide permits. As a result of a directive from the President's Task Force on Regulatory Relief, we are implementing significant program reforms which are expediting processing of applications and reducing the regulatory burden on the public. We are now completing review of applications in an average of 75 days compared to 120 days at the end of FY 1982. Additional reforms and administrative changes will be implemented by regulation by the end of 1986.

National Emergency Preparedness Planning

The Corps FY 1987 National Emergency Preparedness Planning Program was developed to continue the implementation of a comprehensive five-year effort to develop and maintain a capability to respond decisively and effectively

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to any national emergency. The FY 1987 budget request of $13,500,000, an increase of $3,600,000 over the FY 1986 allocation, reflects expanded preparedness planning efforts particularily with respect to the Emergency Water Planning mission and implementation of the emergency relocation site program. Briefly, the funds will be used to develop and upgrade national emergency response plans; to train personnel to meet the responsibilities of a national emergency; maintain critical emergency facilities; and to test plans, personnel, training, and facilities. Other scheduled activities include: the expansion of the Emergency Water Planning mission through the involvement of additional Corps districts; the upgrading and converting of existing facilities to emergency relocation sites to increase the survivability of the Corps command and control structure; the upgrading of existing substandard emergency operations centers; and the expansion of the Corps macro-analysis program to study, on a regional basis, the Corps requirements and capabilities during a mobilization.

River Ice Management (RIM) Research Program

Across the northern United States, ice presents a major physical impediment to winter navigation on domestic waterways, particularly in those areas accustomed to year-round navigation. The challenge is to develop ice control techniques which will permit cost-effective, reliable, and safe navigation throughout the year without adverse environmental effects. The FY 1987 budget request includes $2,500,000 for the fifth year of the six-year $12,000,000 River Ice Management research program to develop structural and operational solutions to ice problems in navigable rivers systems.

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Repair, Evaluation, Maintenance, & Rehabilitation (REMR) Research Program

Of the more than 600 Corps-operated-and-maintained hydraulic structures, more than half are over 20 years old, 42 percent are more than 30 years old, and 26 percent were constructed prior to 1940. Many of these structures will reach their 50-year design lives by the turn of the century. Experience has shown that repair and rehabilitation of older facilities requires various types of expertise, some of which are different from those required in connection with design and construction of new structures. Because of this, the Corps has included in its FY 1987 budget request $7,780,000 for the fourth year of the six-year $35,000,000 REMR program. Solutions to these problems will permit the Corps to respond more efficiently and economically to REMR responsibilities.

Catalog of Future Maintenance and Repair (COFMAR)

Increased effort is continuing to better define and characterize the make-up of the Corps maintenance program. We are now in the process of cataloging all unaccomplished maintenance and repair -- identifying not only the economics and the scope of work involved but also the relative national priorities as determined by the functioning of a project and the severity of the problem. This procedure should facilitate our efforts to program and plan future maintenance requirements, including major rehabilitation, and to develop a more responsive multi-year investment level.

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ACTIVITIES UNDER THE FLOOD CONTROL AND COASTAL EMERGENCIES APPROPRIATION

Under Public Law 84-99, Flood Control and Coastal Emergencies, the Corps accomplishes advance planning and preparedness activities to insure rapid response to natural as well as manmade disasters. The FY 1987 budget request is $25,000,000, which is equal to the FY 1986 appropriation. This funding would support the preparedness activities as well as meet a moderate amount of emergency operations requirements.

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ACTIVITIES UNDER THE REVOLVING FUND APPROPRIATION

Estimated capital improvement program expenditures in FY 1987 are $83,000,000, including $12,000,000 of new budget authority to be used as follows: $10,000,000 to continue construction of a replacement dustpan dredge, and $2,000,000 for the Corps of Engineers Automation Plan (CEAP) acquisition program. Both of these items were previously approved by the Appropriation Committees. Expenditures for the Plant Replacement and Improvement Program items, other than the above, will be funded from income generated through the Revolving Fund rental charges for use of Government-owned plant and equipment. From this source we have programmed $8,315,000 for four major new items, including: $940,000 for construction of an erosion protection system for the Savannah District Engineer Depot; $125,000 for design and to initiate construction of a replacement tender for the Vicksburg District; $200,000 for design of a crane barge for use by the Mobile District; $7,000,000 to initiate construction of an office building for the Walla Walla District; and $50,000 for design of additions and betterments for the Coastal Engineering Research Center headquarters building at the Waterways Experiment Station. The remaining $62,685,000 includes $46,005,000 for continuing major items previously approved for acquisition, and $16,680,000 for design, rehabilitation, construction, acquisition, and additions and betterments of miscellaneous items, such as structures, floating plant, mobile and fixed land plant, small tools, and office furniture and equipment.

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ACTIVITIES UNDER THE FLOOD CONTROL, MISSISSIPPI RIVER AND TRIBUTARIES, ARKANSAS, ILLINOIS, KENTUCKY, LOUISIANA, MISSISSIPPI, MISSOURI AND TENNESSEE (FC, MR&T) APPROPRIATION

Overall Request

The FY 1987 budget request for FC, MR&T of $298,000,000 reflects a decrease of $16,760,000 from the FY 1986 appropriation of $314,760,000. Table 1 shows the breakdown by category and class and the number of studies, features, and dollar amounts for FY 1986 and 1987.

Major Highlights

The construction of the Old River Control Structure is scheduled for completion in November 1986. In addition, four survey studies will be completed during FY 1987. The proposed FY 1987 program also includes $3,500,000 to continue remedial measures at Sardis Dam in Mississippi under the Dam Safety Assurance Program. During the first quarter of FY 1986, contracts were awarded for 0.9 miles of main stem levee improvements and contracts were completed on 7.3 miles of levee improvements. Contracts for an additional 8.4 miles of levee improvements are scheduled for completion in the remaining three quarters. The channel improvement program is continuing at a normal pace.

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TABLE 1

FLOOD CONTROL, MISSISSIPPI RIVER AND TRIBUTARIES

Feature	Fiscal Year 1986 Number of Features or Studies New	Cont	Compl	Amount ($ 000)	Fiscal Year 1987 Number of Features or Studies New	Cont	Compl	Amount ($ 000)	Increase or Decrease ($ 000)
General Investigations				7,605				7,062	-543
Surveys, Including Phase I Stage of AE&D	2	7	1	(3,576)	-	4	4	(3,044)	(-532)
Collection of Basic Data	NA	1	NA	(270)	NA	1	NA	(270)	(0)
Advance Engineering and Design	-	2	1	(1,345)	-	2	-	(1,590)	(+245)
Continuation of Planning and Engineering	1	3	-	(2,414)	-	4	-	(2,158)	(-256)
Construction	-	9	-	223,660	-	11	1	193,024	-30,636
Dam Safety Assurance	-	1	-	3,500	-	1	-	3,500	0
Maintenance	-	28	-	104,995	-	28	-	104,841	- 154
Savings and Slippage				- 25,000				- 10,427	+14,573
TOTALS				314,760				298,000	-16,760

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ACTIVITIES UNDER THE GENERAL EXPENSES APPROPRIATION

The FY 1987 budget request for General Expenses is $115,000,000, an increase of $8,000,000 over the FY 1986 appropriation. This appropriation, which is essentially for the executive direction and management of the Civil Works program, includes requirements for the Office, Chief of Engineers, the 11 division offices, and four support centers. The FY 1987 request is based on estimates of requirements including increased civilian and military personnel compensation and benefits; increased communications and utilities costs and Standard Level User Charges for rent; and inflation allowances for ADP and office automation, training, supplies, equipment and equipment maintenance. Travel costs will be funded at the current level.

PERMANENT APPROPRIATIONS

The FY 1987 request for Permanent Appropriations is $9,000,000, the same amount as the FY 1986 allocation, and is the amount estimated to be available in the Governmental receipt accounts established by law as permanent appropriations to the Corps.

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INITIATION OF NAVIGATION PROJECTS

Mr. BEVILL. Mr. Secretary, on page eight of the major policy initiative booklet accompanying the fiscal year 1987 budget, it states that the Administration will initiate construction on the 17 new navigation projects funded in the 1985 supplemental only after enactment of the navigation user fees contained in the budget. On page nine of your statement you state that you will not begin construction without the user fee legislation.

As you know, last year in the F.Y. 1985 Supplemental Act, Congress provided funding for 41 new construction starts subject to the signing of cost sharing agreements acceptable to the Secretary of the Army or cost sharing specified in subsequent authorizing legislation. These conditions expire on May the 15th.

Now, in view of this specific action by Congress and the President in authorizing and funding these projects, what justification is there for not starting them if the conditions have not been met by May the 15th, assuming H.R. 6 or similar legislation does not get enacted? I know you are optimistic that it will, and I like to be optimistic too and I am, but assuming it does not, what would be the situation?

NEED FOR LEGISLATION

Mr. DAWSON. Well, sir, Mr. Chairman, the passage under the leadership of this subcommittee of those 41 new starts was an historic breakthrough and we look at it that way. For the 17 navigation projects, we are poised to move on many of those come May the 15th, whichever eventuality occurs, namely, either we get a bill as we all hope we will, or we do not.

On the navigation projects, as you properly stated, it is our position that they will be authorized. We do not question that. But part of the cost sharing acceptable to the Secretary of the Army would be the passage of the port and inland waterway user fees that are in both House and Senate bills, in different forms granted, but are in the legislation that is working its way through the Congress. Without that income in the form of the ad valorem fee for the ports and the inland waterway user tax, we do not think it budgetarily prudent or wise for us to move ahead. We do not say the projects won't be authorized; they will be, as you rightly pointed out. The question will be then what is acceptable cost sharing for those projects. As you said, I think the thing to emphasize, or I would like to emphasize, is that we can get a bill. There is no reason we cannot get a bill and make that whole discussion not the controlling thing because we hope to get the bill up before the Senate as early as this week; if not this week then next week, and then go to the House-Senate Conference and get in place both the authorizations and user fees that you mentioned.

Mr. BEVILL. So actually you do not expect us to get into that position because you expect H.R. 6 to be enacted?

Mr. DAWSON. Absolutely, or a version thereof that would be signable.

Mr. BEVILL. Well, I share your optimism even though we have not seen an omnibus authorization bill in 15 years. I share your optimism, but I would call your attention—and you might want your

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counsel to look into it—that during the Nixon Administration there was a refusal to spend funds appropriated by Congress for projects and the U.S. Supreme Court made the point, and I am quoting this off the top of my head but I think this is the gist of it, that the Executive Branch does not have the authority to hold up appropriated funds. Where Congress appropriates the money, that is it. So you might want to look into that.

Mr. DAWSON. Yes, sir. We certainly do not wish to do that. We are in favor of these projects. We think they ought to go ahead and have every hope that we will be moving out on them come May 15th and June 30th.

SIGNED AGREEMENTS

Mr. BEVILL. All right.

The act also specifies that the funds contained in the supplemental, $48.8 million, will lapse on June the 30th, 1986, if agreements have not been signed. My question is how many local sponsors have signed binding agreements involving the 41 projects?

Mr. DAWSON. Mr. Chairman, with your permission this might be a good time for a brief report from General Hatch.

Mr. BEVILL. I know you mentioned General Hatch was the authority on that, so we will hear from you, General Hatch.

General HATCH. Sir, based on information that we have gleaned from some workshops that we have held around the country with our folks in the field, our tally right now is that at least 22 of the 41 are very likely to be signed. We only actually have a couple of them signed right now, with perhaps four not likely to be signed by the June deadline, but we are really quite optimistic. That is just a summary; I will provide a detailed status report for the record.

Mr. BEVILL. 22 out of the 41?

General HATCH. Yes, sir.

Mr. BEVILL. That is very good.

[The information follows:]

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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS -
CIVIL WORKS
FY 1985 SUPPLEMENTAL (P.L. 99-88) NEW START CONSTRUCTION PROJECTS
STATUS
LCA

STATE	PROJECT	PRIMARY PROJECT OUTPUT	OUTLOOK FOR SIGNING OF AGREEMENT BY 30 JUN 86 (FLCA)	SCOPE OF PROJECT
AL	MOBILE HARBOR	Commercial Navigation (Deep Draft)	Very Likely	Phased construction: Scheduled 57 foot entrance channel, 55 foot Bay Channel and 40 foot McDuffie Island Turning Basin. Transshipment Facility (constructed by sponsor). Remainder of project unscheduled.
		Remarks - Non-Federal portion will be financed by revenues from dock operations, oil-lease funds, industrial development bonds, and state appropriated funds. Construction period to be phased to be phased to match Alabama State Docks requirements. Incremental maintenance dredging cost sharing must be determined.		
AL	WILLIAM BACON OLIVER L&D	Inland Navigation	Not Required	28' Lift, 110' x 600' Lock; remove old lock.
		Remarks - 50% of funds from Inland Waterways Trust Fund. 50% of funds from Construction, General.		
AR	EIGHT MILE CREEK	Flood Control	Not likely	Would be based on reduced scope project (only upstream urban reach is scheduled; downstream agricultural area unscheduled).
		Remarks - Extent of local participation is currently under discussion.		
CA	FAIRFIELD VICINITY STREAMS	Flood Control	Very Likely	Channel improvements and diversions, recreation facilities.
		Remarks - Value of completed work by local sponsor must be determined.		

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STATE	PROJECT	PRIMARY PROJECT OUTPUT	OUTLOOK FOR SIGNING OF AGREEMENT BY 30 JUN 86 (FLCA)	SCOPE OF PROJECT
CA	MERCED COUNTY STREAMS	Flood Control	Possible	Reservoir construction, channel work, fish and wildlife mitigation.
		Remarks - Project has both major reservoir and local protection outputs. Local sponsor financing requirements are an issue. State legislative relief on cash contribution may be needed.		
CA	RICHMOND HARBOR	Commercial Navigation (Deep Harbor)	Possible	Deepen Entrance Channel, Potrero Reach Channel, and Inner Harbor Channel to 41 feet; 41 foot deep by 1,425 foot Turning Basin at Ford Channel.
		Remarks - General Design Memo on tight schedule. Local sponsor considering bonds as a source of funding.		
CA	SACRAMENTO DEEPWATER SHIP CHANNEL	Commercial Navigation (Deep Harbor)	Possible	Deepen existing channel from 30 to 35 feet from Collinsville to Port of Sacramento; widen channel 250 to 350 feet as necessary; fish and wildlife mitigation. Recreation unscheduled.
		Remarks - Construction schedule may be extended to meet local sponsor financial arrangements.		
FL	DADE COUNTY, N. OF HAULOVER BEACH PARK	Recreation and Flood Control	Very Likely	Initial fill scheduled. Periodic nourishment unscheduled.
		Remarks - No significant issues.		
FL	TAMPA HARBOR BRANCH CHANNELS, INCL EAST BAY CHNL MAINT.	Commercial Navigation (Deep Harbor)	Very Likely	Hillsborough Bay, Ybor and Sparkman Channels scheduled.
		Remarks - Unresolved issue is the maintenance responsibility of East Bay Channel. Economic feasibility of Port Tampa channels must be determined.		
GA	SAVANNAH HARBOR WIDENING	Commercial Navigation (Deep Harbor)	Very Likely	Widen channel from 400 to 500 feet (between Fig Island and Kings Island).
		Remarks - Bond issue required in FY 1987. Channel widening will be cost shared 25% non-Federal, 75% Federal.		

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STATE	PROJECT	PRIMARY PROJECT OUTPUT	OUTLOOK FOR SIGNING OF AGREEMENT NY 30 JUN 86 (FLCA)	SCOPE OF PROJECT
HI	KAHOMA STREAM	Flood Control	Very Likely	Channel improvement, debris basin, rubble apron.
		Remarks - Maui County must sell $3 million in bonds.		
IA	DES MOINES RECREATIONAL RIVER AND GREENBELT	Recreation and Env. Quality Enhance	Not Likely	Recreation sites, fish and wildlife enhancement, bank stabilization.
		Remarks - Scope of project has not been defined. No sponsor identified to date.		
IL, MO	L&D 26, ALTON, IL&MO 2ND LOCK, EXCL ENV MGMT	Inland Navigation	Not required	600' x 110' Lock.
		Remarks - 50% of funds from Inland Waterways Trust Fund. 50% of funds from Construction, General.		
LA	ATCHAFALAYA BASIN FLOODWAY	Flood Control	Not Required	Flood control (acquisition of flowage easements) is scheduled. Recreation and fish & wildlife enhancement are unscheduled.
		Remarks - Scheduled flood control portion is 100% Federal responsibility.		
LA	MISSISSIPPI RIVER SHIP CHANNEL	Commercial Navigation (Deep Draft)	Very Likely	Phased construction. Scheduled 50 foot deep draft channel to river mile 181. Remainder of project unscheduled.
		Remarks - Designated sponsor is the Louisiana Dept. of Commerce. Bond issue required. Saltwater intrusion mitigation necessitated by construction of general navigation project. Federal Government would share in the operation & maintenance of the mitigation works. Incremental maintenance dredging cost sharing must be determined.		
LA	PEARL RIVER, SLIDELL, ST. TAMMANY PARISH	Flood Control	Possible	Levees, floodgates, pumping plants.
		Remarks - Currently scheduled for Board of Engineers for Rivers and Harbors (BERH) review on 5 March 86. Negotiations to consider issues raised during review.		
MD & VA	BALTIMORE HARBORS AND CHANNELS	Commercial Navigation (Deep Draft)	Very Likely	Phased construction: 50 foot channel, reduced channel widths. Remaining phase (widening to authorized dimensions) unscheduled.

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STATE	PROJECT	PRIMARY PROJECT OUTPUT	OUTLOOK FOR SIGNING OF AGREEMENT BY 30 JUN 86 (FLCA)	SCOPE OF PROJECT
		Remarks - Unresolved issue--credit for disposal at Hart-Miller Island for O&M and total amount to be credited in calculating percent to be paid back over time. Incremental maintenance dredging cost sharing must be determined.		
ME	JONESPORT HARBOR	Commercial Navigation (Shallow Draft)	Likely	Breakwater, entrance channel, anchorage area.
		Remarks - Possible problem on timing of availability of sponsor's funds. Portion of funding would be subject to state-wide referendum scheduled for November 86. Initiation of construction is contingent upon passage of referendum.		
MN	BASSETT CREEK	Flood Control	Likely	Channel improvement, tunnels, flood control structures.
		Remarks - Prior work performed by sponsors. Only work directly related to implementation of the authorized project is eligible for credit. Subarrangements among local sponsors would have to be in place prior to execution of agreement with lead sponsor.		
MN, WI, IL, IA, MO	ENV MGMT, LAD26, ALTCH, IL&MO, 2nd LOCK	Recreation and Env. Quality Enhance.	Possible	Scheduled sites: Blackhawk, Monkey Chute, Wilcox Camp, Island No. 42, Guttenberg, Kaskeskia Chute, Cape Girardeau; remainder unscheduled.
		Remarks - Anticipate a range of small projects over a 10-year period. States have funds and are ready to cost share. Project involves recreation and environmental quality enhancement activities to be cost shared by output.		
MS	GULFPORT HARBOR	Commercial Navigation (Deep Harbor)	Not Likely	Project scope not yet determined; AE&D initiated in FY 86.
		Remarks - Unresolved major issue--method of dredged material disposal. Non-Federal funding not yet arranged. Expect to maintain orderly design process. Construction not scheduled pending completion of design.		
NE, SD	MISSOURI NATIONAL REC RIVER	Streambank Erosion & Recreation	Possible	Undetermined.
		Remarks - Scope of work must be determined. No sponsor identified to date.		

STATE	PROJECT	PRIMARY PROJECT OUTPUT	OUTLOOK FOR SIGNING OF AGREEMENT BY 30 JUN 86 (FLCA)	SCOPE OF PROJECT
NJ	BARNEGAT INLET	Navigation, Recreation, Commercial	Likely	Jetty, channel dredging.
		Remarks - No significant issues remain.		
NJ	LIBERTY STATE PARK LEVEE AND SEAWALL	Recreation and Urban Renewal		LikelyLevees and walkways.
		Remarks - Project based on 50/50 cost sharing of construction and assumption by sponsor of O&M activities.		
NY	ARDSLEY LOCAL PROTECTION	Flood Control	Likely	Levees, floodwall, concrete flume, channel work. Project to be constructed may be somewhat smaller than authorized due to changes at downstream end.
		Remarks - LCA must be reviewed by NY State Attorney General's office prior to signature by State Department of Environmental Conservation.		
NY	MORICHES INLET	Recreation, Commercial Navigation	Possible	Jetty, channel dredging.
		Remarks - Actual project construction contingent upon State Department of Environmental Conservation accepting O&M cost sharing responsibility. 50/50 construction cost sharing agreeable to sponsor.		
NY	ELLICOTT CREEK	Flood Control	See Remarks	Channelization and diversion channel works.
		Remarks - Standard 221 Agreement previously executed by District Engineer and sponsor. If cost-sharing legislation is enacted a new LCA with cost sharing may have to be executed.		
NY	PORT ONTARIO HARBOR	Recreation, Commercial Navigation	Likely	Breakwaters, entrance channel, inner channel.
		Remarks - Mixed outputs: 65% - recreation navigation, 35% - commercial navigation. New York State Office of Parks, Recreation and Historic Preservation has legal authority to execute agreement, however, financing arrangements must be determined.		

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STATE	PROJECT	PRIMARY PROJECT OUTPUT	OUTLOOK FOR SIGNING OF AGREEMENT BY 30 JUN 86 (FLCA)	SCOPE OF PROJECT
NY, NJ	KILL VAN KULL, NEWARK BAY CHAN.	Commercial Navigation (Deep Harbor)	Very Likely	Phased construction: Deepen to 40 feet. Deepening to 44 feet is unscheduled based on local needs.
		Remarks - The draft agreement will be addressed by the Board of Commissioners of the Port Authority of New York and New Jersey at its April meeting. Final agreement to be signed by the respective Governors.		
OH	CLEVELAND HARBOR	Commercial Navigation (Deep Harbor)	Possible	Commercial navigation portion scheduled. Recreation (Pier 34) unscheduled.
		Remarks - Developing draft agreement for commercial navigation portion only. Dredged material disposal is an unresolved issue.		
OH	GENEVA-ON-THE-LAKE	Recreation	Very Likely	Breakwater, entrance channel, service channels, mooring area, recreation fishing facility, wetland mitigation.
		Remarks - Bond issue scheduled for March 86 ($7 million); sponsor has $1 million currently available. Sponsor concerned about future maintenance expenses.		
OK	PARKER LAKE	Water Supply	Not Likely	Unscheduled.
		Remarks - Project unscheduled because it is predominantly single purpose water supply, a non-Federal responsibility.		
OR, WA	BONNEVILLE NAVIGATION LOCK	Inland Navigation	Not Required	86' x 675' Lock.
		Remarks - 50% of funds from Inland Waterways Trust Fund. 50% of funds from Construction, General.		
PA	COWANESQUE LAKE MOD	Flood Control & Water Supply	See Remarks	Dam modifications, reservoir slope stabilization, recreation.
		Remarks - Separate contracts on recreation and water supply are being negotiated. Unresolved issue--proper amount of existing project costs to be borne by water supply sponsor. To ensure full implementation, sponsor requests Federal Government to execute both contracts concurrently.		

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STATE	PROJECT	PRIMARY PROJECT OUTPUT	OUTLOOK FOR SIGNING OF AGREEMENT BY 30 JUN 86 (FLCA)	SCOPE OF PROJECT
TX	CLEAR CREEK	Flood Control	Likely	Channels and outlet structure.
		Remarks - There are three local sponsors; however, Brazoria Co. may withdraw which would truncate project at Brazoria Co. line. The Corps is seeking a binding agreement with primary sponsor, Harris County. $25M bond issue approved. $15M bond issue not approved.		
TX	COLO RIVER AND TRIBS. BOGGY CREEK AT AUSTIN	Flood Control	Possible	See Remarks.
		Remarks - Question on whether the project is NED Plan (10-year protection) or 100-year protection. Local sponsor has acquired lands and performed bridge relocation work prior to PL 99-88 enactment. Local sponsor has bond sold; however, more bonds needed.		
TX	FREEPORT HARBOR (1970 ACT)	Commercial Navigation (Deep Harbor)	Very Likely	North Jetty relocation, South Jetty rehab, channel and turning basin dredging/widening, recreation area, Coast Guard Station relocation.
		Remarks - Bonds have been approved and sold; local sponsor's funds are available.		
UT	LITTLE DELL LAKE	Flood Control, Water Supply	Likely	See Remarks.
		Remarks - Local sponsor desires reduced scope project to meet needs. Recreation unscheduled. The two local sponsors, one for water supply, one for flood control want to jointly sign one LCA.		
VA	NORFOLK HARBOR	Commercial Navigation (Deep Draft)	Very Likely	Phased construction: 50 foot outbound channel deepening, remainder unscheduled.
		Remarks - Sponsor desires reduced scope project (reduced channel widths and outbound lane). Final agreement to be executed by Port Director, approved by Governor and Attorney General.		
VA	RICHMOND LOCAL PROTECTION	Flood Control	Likely	Levees, floodwalls, pumping stations.
		Remarks - Local sponsor wants project expedited; area suffered severe damages in October 1985 flood. Sponsor expresses desire to contract with Corps for relocations at local expense.		

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STATE	PROJECT	PRIMARY PROJECT OUTPUT	OUTLOOK FOR SIGNING OF AGREEMENT BY 30 JUN 86 (FLCA)	SCOPE OF PROJECT
VA	VIRGINIA BEACH STREAMS, CANAL NO. 2	Flood Control	Very Likely	New canal and channelization of existing channel to carry 100-yr flood.
		Remarks - Nearly all lands required are already held by sponsor. Sponsor may make payments by periodic installment.		
WV, OH	GALLIPOLIS LOCKS & DAM	Inland Navigation	Not Required	Main Lock 110' x 1200'. Auxiliary Lock 110' x 600'. Existing dam rehabilitation.
		Remarks - Land acquisition proceeding. 50% funds from Inland Waterways Trust Fund. 50% of funds from Construction, General.		

FOLLOW-ON FUNDS

Does the fiscal year 1987 budget provide follow-on funds for all of the 41 projects? General Hatch, is that in your department?

General HATCH. All but one, sir.

Mr. BEVILL. The chair recognizes Mr. Myers.

Mr. MYERS. Mr. Chairman, I will yield at this time to Chairman Whitten.

ADMINISTRATION'S BUDGETARY PROPOSALS

Mr. BEVILL. The chairman recognizes the chairman.

Mr. WHITTEN. I appreciate the courtesy of my friend. We have another meeting next door which I must attend, and I appreciate your appearance this afternoon.

You know, I have a chief responsibility here because of my position to try to make all these parts fit in the budget, and this committee has to meet an allocation divided between the various 13 subcommittees. Of course, you can imagine about all I can do is lay my plan out, after talking to my colleagues and the staff, and then I have to make it satisfactory to the various subcommittee chairmen. The system works very well, but I have to act responsibly rather than accepting what is submitted to us.

The Administration has submitted a budget to us which cuts American agriculture about $7 billion at a time when most of agriculture is bankrupt to start with. That includes cutting just about everything that looks after the land.

May I say, Mr. Secretary, I know your background is excellent, but you are not your own boss in many ways and neither am I on this committee. We have 57 members so we all have our problems. But just as an example the budget submitted to us cuts education two and a half billion dollars. Most of the domestic programs are drastically reduced or eliminated. Then I look further and they do not apply the reductions on the deficit or the debt. They put it on increased carryover for military spending and foreign aid.

DEPARTMENT OF DEFENSE PROGRAM

I would like to put in the record at this point, Mr. Chairman, the Department of Defense table showing that from 1975 up to date they have increased this carryover from $44 billion of unspent money at the end of the year, and they ask for $299 billion carryover of unspent funds. So all these cuts you are giving us in the budget of domestic programs goes to increase foreign aid, about $3 billion and to increasing the carryover of the military appropriations unspent of $299.7 billion. I do not believe the American people are for that, and I do not believe they will stand for it any longer, and I want this table to appear in the record.

[The information follows:]

DEPARTMENT OF DEFENSE

[In billions of dollars]

Unobligated balances:	
FY 1975	$16.7
FY 1976 (TQ)	21.0
FY 1977	20.0

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FY 1978	21.3
FY 1979	23.0
FY 1980	24.2
FY 1981	26.5
FY 1982	34.6
FY 1983	43.4
FY 1984	51.6
FY 1985	61.5
FY 1986 est	59.9
FY 1987 est	60.3
Unexpended balances:	
FY 1975	$44.0
FY 1976 (TQ)	51.4
FY 1977	62.6
FY 1978	73.6
FY 1979	83.9
FY 1980	92.2
FY 1981	112.8
FY 1982	142.2
FY 1983	172.1
FY 1984	205.1
FY 1985	244.3
FY 1986 est	262.4
FY 1987 est	299.7

ASSUMPTIONS AND DEFICIT PROJECTIONS

The Office of Management and Budget recommended to the Congress that we cut domestic programs $28 billion. But they ask us to increase military carryover $36 billion.

I noticed you mentioned Gramm-Rudman. Four members of our Appropriations Committee, including myself, were on the conference committee. Did you know that they start off with an assumption and everything builds on an assumption and the projection and some folks say hallucinations.

Mr. Gramm is an economist. I told him every business has an economist but no business ever turned it over to an economist to operate. On that committee I am proud to say that our members from my committee insisted, and we were successful in including language providing that they cannot cut out a program, a project or an activity, but that did not save the day. Two-thirds of our government is excluded; so the other third has three times as much as they would if you had not exempted these two.

COURT REVIEW

And the next thing I want to point out is the Supreme Court has yet to approve that provision. The three judge court threw it out; and if they do say it is illegal, you have a fallback position, but that says Congress has got to pass it in five days. So all your statement about Gramm-Rudman is in your optimistic belief that it may become the law. Is that right?

Mr. DAWSON. Well, sir, or the belief that something else would have to be substituted for it.

Mr. WHITTEN. In other words, it has to be a change in the law before your figures would be firm.

Mr. DAWSON. Yes, sir.

Mr. WHITTEN. You say you could—if it dies or if it is not passed, your statement would not apply, would it?

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Mr. DAWSON. I think that is correct, Mr. Chairman, but in principle I think we foresee continued pressure on the budget from whatever——

Mr. WHITTEN. You are not approving the increase in carryover for military spending, sir?

Mr. DAWSON. No, sir.

Mr. WHITTEN. Or foreign aid, are you?

Mr. DAWSON. That is not our purpose.

COST SHARING OF ONGOING CONSTRUCTION

Mr. WHITTEN. I would like for the map of the Mississippi River basin to be included in the record here. The Basin drains about 41 percent of the Continental United States except for Alaska and because the runoff is not controlled, we get a flood almost every year. I am a little better off than my colleague here from New Orleans. She gets all the water and I get some of it, and I live on the hills on the edge of it. But last year we got language in the supplemental bill which passed the Congress, was signed by the President, a provision which provided that "where construction of a comprehensive project for flood control and improvement of a multi-state region described in this paragraph has commenced prior to the date of enactment of this Act, new or additional nonfederal cost sharing shali not be required for any part of such comprehensive project, and where construction of such a project has begun prior to the date of enactment of this Act, all elements or features of the comprehensive project shall be considered to be part of that project."

The House approved that language by a vote of 296 to 124. How do you justify cost sharing provisions as part of the MR&T project?

Mr. DAWSON. Well, sir, we are proposing that in any program that breaks us out of the 15-year logjam that Chairman Bevill mentioned, if we are to get a bill, we have to address cost sharing in the same way.

Mr. WHITTEN. You already have a law. You have not got a bill. This is a law. What are you going to negate the law for?

Mr. DAWSON. My point in the testimony was not to negate the law.

Mr. WHITTEN. It is just as plain as the nose on your face.

Mr. DAWSON. I agree, but we are looking for an omnibus bill that will give us a new lease on life with new projects and a way to proceed.

Mr. WHITTEN. It would not give me and Mrs. Boggs a new lease on life. It might give you one.

Mr. DAWSON. We think it could——

Mr. WHITTEN. Are you asking us to repeal the law?

MR&T CONSTRUCTION

Mr. DAWSON. No, sir. On the main stem and most of the remainder of the MR&T project, we agree completely with you there should be no change in cost sharing. There are only certain parts, 20 percent or less of the huge project——

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Mr. WHITTEN. We both understand they make substantial contributions as it is. You are not counting on increasing what they now make?

Mr. DAWSON. On most of the project, that is correct.

Mr. WHITTEN. Most means a whole lot. What are they?

Mr. DAWSON. Well, the parts that we are proposing and feel we must have——

Mr. WHITTEN. You realize you would have to change the law for you to get it done.

Mr. DAWSON. Absolutely.

Mr. WHITTEN. You are asking for repeal of this law; is that it?

Mr. DAWSON. We are asking for some change in that, but most of the integrity of that would be preserved.

Mr. WHITTEN. If it is not changed, you will abide by this provision?

Mr. DAWSON. My point is I do not think we are going to have a program——

Mr. WHITTEN. I want you to answer my statement. In the absence of a change in the law, you realize this is controlling.

Mr. DAWSON. We will abide by the law in all respects. However, because of your concern over this matter, I will provide for the record a copy of an opinion from the Army's General Counsel on the legality of requiring increased cost sharing for separable elements of the MR&T project.

[The information follows:]

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DEPARTMENT OF THE ARMY
OFFICE OF THE GENERAL COUNSEL
WASHINGTON, D.C. 20310

13 February 1986

REPLY TO ATTENTION OF

MEMORANDUM FOR THE ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS)

SUBJECT: Cost-sharing of Separable Water Project Elements

You have asked whether S. 1567 (the Senate water resources bill), if enacted in its present form, would allow non-federal cost-sharing for separable elements of the comprehensive flood control and multi-state improvement projects exempted from cost-sharing in the Supplemental Appropriations Act of 1985, Pub. L. No. 99-88.

We believe the language in the bill and the existing legislative history would allow cost-sharing for separable elements of such projects. As you know, the Corps Chief Counsel opinion of October 3, 1985 states "enactment of the current version of S. 1567 would not repeal the ... prohibition on new or additional non-federal cost-sharing requirements for projects" exempted from additional cost-sharing under the Supplemental Appropriations Act. As is stated above and explained below, we disagree. We have provided Mr. Edelman a copy of this opinion.

Issue

The Supplemental Appropriations Act of 1985 (referred to herein as the Appropriations Act) includes a limited exception to non-federal cost-sharing of water projects listed in the Act. It states:

> Where construction of a comprehensive project for flood control and improvement of a multi-State region described in this paragraph has commenced prior to the date of enactment of this Act, new or additional non-Federal cost-sharing shall not be required for any part of such com-

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> prehensive project, and where construction of such a project has begun prior to the date of enactment of this Act, all elements or features of the comprehensive project shall be considered to be part of that project.

Pub. L. No. 99-88, Ch. IV, pg. 21. Perhaps most significantly, this language has prohibited any new cost-sharing for the projects within the multi-state flood control plan for the Mississippi River and Tributaries, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri and Tennessee. Congress authorized the expansive Mississippi River and Tributaries flood control protection plan in 1928. 33 U.S.C § 702 (1976). The law empowers the Secretary of the Army to carry out the plans of the Mississippi River Commission for flood control; these plans include many water projects in the multi-state region. Your staff informs us the total cost of the authorized work for the Mississippi River and Tributaries is $9.2 billion. As of September 30, 1984, $3.8 billion had been allocated to Corps districts to construct parts of this comprehensive flood control plan.

As currently drafted, S. 1567 includes new cost-sharing provisions which would conflict with the Appropriation Act's cost-sharing prohibition noted above. Section 701 of S. 1567 states:

> Excluding projects for inland Waterway locks and dams and commercial navigation projects in the commercial channels and harbors of the United States, the construction of Corps of Engineers water or related land resources projects (including small projects not specifically authorized by Congress), or separable elements thereof, on which physical construction has not been initiated prior to June 30, 1985, shall be initiated only after non-Federal interests have entered into binding agreements with the Secretary, agreeing to pay 100 per centum of operation, maintenance, and rehabilitation costs, and agreeing to share in the assigned joint and separable costs of construction"

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S. 1567, 99th Cong., 1st Sess. § 701(a) (1985) (emphasis added). The legislative history explains this provision as follows:

> Any water resources project, or separable element of a project, that was not under construction by June 30, 1985, is subject to the new cost-sharing policy outlined in this title. These projects or elements will be initiated only after non-Federal project sponsors agree to pay all of the operation and maintenance costs of the project, plus agree to share construction costs as described here.

S. Rep. No. 99-126, 99th Cong., 1st Sess., p. 67 (emphasis added). Neither the bill nor the legislative history to date exempt separable elements of the Mississippi River and Tributaries flood control plan (or of any other such comprehensive multi-state project) from these cost-sharing requirements.

The Corps Chief Counsel indicated that S. 1567, if enacted in its current form, would not repeal the Appropriations Act's exception to cost-sharing prohibition of additional cost-sharing for the Mississippi River and Tributaries. Mr. Edelman concluded that the Appropriations Act could be interpreted as carving out a "specific geographical exception" to the proposed cost-sharing requirements and thus is not necessarily in conflict with S. 1567. His opinion also makes the point that Congress probably does not intend S. 1567 to reverse the Appropriations Act's exception to cost-sharing because "S. 1567 was in its current form at the time that the exception to its general requirements was recognized and signed into law" in the Appropriations Act.

While it is theoretically possible to read S. 1567 as not being inconsistent with the Appropriations Act, it requires reading in an exception that, for all practical purposes, swallows the rule. More importantly, however, Congress in passing the Appropriations Act has made its intent quite clear. Examination of the legislative history reveals that Congress debated whether to provide for cost-sharing in the Appropriations Act,

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given the imminence of authorization legislation likely to include a different cost-sharing formula. It appears Congress agreed to include cost-sharing in the Appropriations Act as an interim guide, recognizing that the cost-sharing in the authorization legislation would ultimately control.

In the discussion below, we set out the legislative history in more detail. We also analyze applicable rules of statutory construction and address the notion of construing the Appropriation Act's cost-sharing provisions as a geographical exception to the forthcoming cost-sharing legislation.

Analysis

The reason we believe S. 1567, if enacted in its present form, would allow for cost-sharing of separable elements of comprehensive multi-state projects is the language and the legislative history of the Appropriations Act clearly stating that Congress intends the new cost-sharing legislation, whatever its form, to govern over the cost-sharing provisions in the Appropriations Act.

Congress acknowledged its inclusion of of 41 new water projects and cost-sharing provisions in the Appropriations Act as unusual. Historically, Congress has authorized new water projects and set cost-sharing guides in water project authorization statutes rather than in appropriations legislation. The legislative history of the Appropriations Act reveals substantial debate over whether Congress should wait to authorize all new water projects and provide for cost-sharing in the water resources legislation under active consideration in both the House (H.R. 6) and the Senate (S. 1567), or whether Congress should move ahead in the appropriations legislation. There was tension between the House Public Works Committee (favored waiting for the water resources legislation) and the House Appropriations Committee (favored including provisions in the appropriations statute). Representative Myers, who promoted authorizing some projects in the Appropriations Act stated:

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> [U]nfortunately, it has been 5 years since we have had a bill passed out of the authorizing committee, and some of these projects are of such a high priority that in the judgement of your Appropriations Committee, they could not wait any longer ... I think it is unfair to say that we are usurping any authority from that committee.

Cong. Rec. H 6925 (daily ed., July 31, 1985) (statement of Rep. Myers).

Even though Congress authorized new water projects and included cost-sharing provisions in the Appropriations Act, the Appropriations Act and the legislative history make clear Congress's intent to follow the cost-sharing guides of the water resource project authorization legislation as soon as it passes. Representative Myers continued:

> To say that when we enact this [the Appropriations Act] we are destroying chances for H.R. 6 [the House water resources bill], quite to the the contrary.
>
> Our bill [the Appropriations bill] provides that, and I read:
>
> "Or under terms and conditions provided for in subsequent legislation when enacted."
>
> In other words, when H.R. 6 [the House water resources bill] passes, those shall be the conditions of cost-sharing that will prevail... That is why we put the language in here: "That the language of the authorizing committee shall prevail."

Id. (emphasis added). Congress passed the Appropriations Act with the condition referenced by Representative Myers. Specifically the Act states:

> That none of the funds herein appropriated may be expended to undertake such projects except under terms and conditions acceptable to the Secretary of the Army (or under terms and conditions pro-

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vided for in subsequent legislation when enacted into law) as shall be set forth in binding agreements with non-Federal entities desiring to participate in project construction.

Pub. L. No. 99-88 (emphasis added). This language immediately precedes the Appropriations Act's prohibition on further cost-sharing for comprehensive multi-state flood control projects set out earlier in this memorandum.

Briefly, in passing the Appropriations Act, Congress acknowledged the imminent water resource project authorization legislation would most likely include cost-sharing provisions different from the cost-sharing provisions of the Appropriations Act. The legislative history states Congress's intent that the authorization legislation's cost-sharing "be the conditions of cost-sharing that will prevail." Cong. Rec. H 6925, July 31, 1985.

As further evidence of this intent, the Appropriations Act requires "initiation of construction with respect to any project referred to in this paragraph shall be subject to subsequent enactment of legislation specifying the requirements of local cooperation for water resources development projects...; except that this sentence shall not apply after May 15, 1986." Pub. L. No. 99-88 (following the Act's exception to cost-sharing in the same paragraph). Thus even though Congress authorized new projects and provided cost-sharing guides in the Appropriations Act, it delayed the initiation of construction of any such projects until the earlier of either (1) passage of and compliance with the cost-sharing requirements of water resource project authorization legislation, or (2) May 15, 1986. This is further evidence that Congress intends the cost-sharing terms of the imminent water project authorization legislation to control over the cost-sharing provisions of the Appropriations Act.

Thus it is my conclusion that S. 1567, if enacted, would override the provisions of the Appropriations Act and require cost-sharing for separable elements of water projects.

If we may be of any additional assistance in this matter, please do not hesitate to call.

Susan J. Crawford
General Counsel

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Mr. WHITTEN. I am glad to have you say that. I picked this up some years ago, "Conquest of the Land Through 7,000 Years." It traces worn out parts of Asia and Europe and it ends up with this statement, a suggested Eleventh Commandment as follows: "Thou shalt inherit the Holy Earth as a faithful steward, conserving its resources and productivity from generation to generation. Thou shalt safeguard thy fields from soil erosion, thy living waters from drying up, thy forests from desolation, and protect thy hills from overgrazing by thy herds, that thy descendants may have abundance forever. If any shall fail in this stewardship of the land thy fruitful fields shall become sterile stony ground and wasting gullies, and thy descendants shall decrease and live in poverty or perish from off the face of the earth."

We are in a serious financial situation, but let's not get wealth mixed up with economics. When your debt increases to $1 trillion in five years, which is more than we had in 200 years, it is deadly serious, true. But the only way in the world to handle it is to protect the real wealth which is the land and substance thereof. We have got those who are stewards of the land and they are in very, very bad shape. About two-thirds are bankrupt. And if you neglect this all to put the money over into an increased carryover for military spending and foreign aid, you are just violating what ought to be an Eleven Commandment.

But when you say that you are going to abide by the law, that is all I can ask and I want to say, Mr. Secretary, we are proud of you in this position. I know that you know, but you are like me. I cannot run this committee. Somebody said how do you run a committee? I said you don't. You find out what they will do and you run around in front like you thought of it first. That is what I have got to do. I had a chance to point out to the head man about two weeks ago that we had better look after our real wealth. Our money problems are definitely a bad thing, but let's not save money by neglecting our wealth.

Mr. BEVILL. Without objection, the map referred to by Chairman Whitten will be made a part of the record.

[The information follows:]

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TOTAL BASIN AREA AS A PERCENTAGE OF CONTINENTAL UNITED STATES

COLUMBIA - NORTH PACIFIC	9.0%	SOURIS - RED - RAINY	1.8%
GREAT BASIN	4.6%	GREAT LAKES	4.4%
CALIFORNIA	5.5%	NEW ENGLAND	2.3%
COLORADO	8.5%	MIDDLE ATLANTIC	3.4%
RIO GRANDE	4.5%	SOUTH ATLANTIC - GULF	9.0%
TEXAS - GULF	5.9%	MISSISSIPPI	41.1%

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NEW START INITIATIVES

Mr. BEVILL. The chair recognizes Mr. Myers.

Mr. MYERS. Thank you, Mr. Chairman, and I join my colleagues in welcoming you, Mr. Secretary, with your new hat you are wearing today and also you, General Hatch, being new, not before the committee, but on this job and, Mr. Cluff, in your responsibility we are pleased to have you.

Following an act like the chairman's is kind of tough.

It is refreshing to have a positive attitude come forth with you here today, Mr. Secretary, hopes for new starts, and we have not always had that. It has been several years since we had anyone come here in your capacity and say we are going toward new starts, we are going to start rebuilding. So we are really pleased you have that attitude. We will try to help you do it.

Also, General Heiberg, I think it is recognized you helped save Indiana. There is something still to be done. You have not saved it all yet. Faint praise, but we do thank you for a wonderful mention. Thank you.

This is the first time in several years we have seen an increase in Corps projects in your budget request here, but I guess it is 300 some million dollars over last year and even more than that when you consider the sequestered funds that would be taken before Congress is going to approve the law.

CHANGE IN FUNDING

This Administration and you have recognized we do have to start doing some of these things. You mentioned that you are going to be working to get that authorization bill through in the other body, and we certainly hope you can. But in the event that we do have the user fee and a harbors trust fund set up, would you come in for reprogramming or a budget request for cutting about $200 million out of O&M funds? How would you handle that?

Mr. DAWSON. If we do not get or if we do——

Mr. MYERS. If you do get it. My understanding is the request does not consider this year you might get that. In previous hearings you always come in with a supplemental request. Would you come back with a budget request to reduce——

Mr. DAWSON. That would certainly be one appropriate method, Mr. Congressman, and I think we would want to look to you and the committee for guidance on that. I am sure that we could find a way to reflect that in the program, certainly, if you want to do that. We are not sure exactly how we would proceed, but I think we would want to come back to you in either case and tell you what we planned to do with the money and how we really could not do anything with the money without your approval, in any event.

HARBOR MAINTENANCE TRUST FUND

Mr. MYERS. Who will administer the trust fund?

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Mr. DAWSON. Well, certainly it would be under——

Mr. MYERS. The Harbor Trust Fund, I am talking about.

Mr. DAWSON. I guess the Treasury Department would have the legal authority to hold and then transfer the funds. But I am sure they would do that in concert with the Department of the Army.

Mr. MYERS. Now, if this user fee is established—and I have to differ, and I usually don't, with my chairman, but if we do not have the user fee, we are not going to build projects up in our area and you are going to continue to get more water down in Mississippi and down in New Orleans. And so if we do not have the user fee, we are not going to give you much help. You are going to have to do it on your own. So the user fee would help us up in our area. We won't have anything built if we do not. Some of us just accepted it, bite the bullet as Lyndon Johnson used to say, and let's go forward with it. But if you get the cost sharing legislation, will you reduce future appropriations or be able to do more?

FUTURE FUNDING

Mr. DAWSON. We predict, Mr. Myers, that we can hold the level of the Civil Works Program over the last several years and maybe even increase it some even in the face of Gramm-Rudman or whatever takes the place of Gramm-Rudman. We would think some sort of budget control mechanism will be in place, so we believe if we get a bill similar to the Senate omnibus bill, we will have a strong program with cost sharing. So, while the level of federal appropriations probably will go down under Gramm-Rudman or some form of that Act, we think that the reductions can be offset by the increased non-federal share coming in as those cuts are occurring on the Federal side.

Mr. MYERS. I swore I would never mention Gramm-Rudman again; but since you brought it up, in light of Gramm-Rudman you have an increase this year, so it is not going to affect in the other direction. I would hope you would say you would build more, and eventually that will happen with the Congress working with you.

Mr. DAWSON. I think that is right, and I think it is an amazing feat, Mr. Myers, that we did get an increase this year. I do not know many agencies around that can say that, and the big reason for that was the fact that we have addressed cost sharing and user fees; we have had this committee's help in recognizing those budgetary realities. I think OMB appreciates that. I think the White House appreciates it, and it has given us credibility in the internal budget wars that a lot of agencies do not have.

INLAND WATERWAYS TRUST FUND

Mr. MYERS. You don't anticipate using the trust fund or user fee funds towards finishing projects already underway and starting those that are authorized but not started? Would those funds be applicable to those starts also?

Mr. DAWSON. Yes, of course, the harbor trust fund would be an O&M trust fund.

Mr. MYERS. I am talking about user fees.

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Mr. DAWSON. The inland user fee would be for both the preconstruction planning and engineering as well as construction of new starts.

Mr. MYERS. Is it your judgment it will be required on projects that are already authorized that Congress may decide to appropriate funds that must be applicable or would the President veto legislation if we did not authorize the use of some user fees and already existing or authorized programs, projects?

Mr. DAWSON. The test we would hope you would use, Mr. Myers, would be whether or not it has begun. Even if we grandfathered all of those that have been authorized, or even a few, our chances of getting a bill plummet because we really need to be as consistent as possible. I think the best test is, has construction yet begun? If it has not, we would hope you would apply cost sharing across the board in a consistent way.

PRIORITY COMMITMENT

Mr. MYERS. We thank you for your testimony and positive attitude of everyone here this morning. As most of us recognize, I think this is going to be a rough year. Most of us have served in this austere atmosphere we find our country in, and most of us recognize we have to do this, but it is going to require that we work with the Executive and we work with you. These are projects, though, that just can't wait and they do return, as you have testified and General Heiberg has testified here, they are projects that return many times the investment.

So it seems to me like these are some of the higher priorities; and, of course, that is what we are going to hear in appropriations all this year, yes, we agree with the cuts, but ours is a high priority. Very few programs Congress considers have the return for the investment these projects not only do have but must have. So we appreciate this. We must work together.

As the President said the other night on the State of the Union message, "We either have to do it alone or work together." I think this year particularly we have to work very close, and I suspect this committee will have to have you up here rather frequently to ask you how we are going to work these things out. We appreciate the positive attitude.

Mr. DAWSON. We believe the civil works program can be a model to show how government programs can work with Gramm-Rudman because of those benefits that you mentioned which can be turned into non-federal cost sharing.

Mr. MYERS. There is bad weather out in the Midwest, we have been fogged in and rained in the last few days, Mrs. Smith is unable to be here today, she wanted to be, but she has some questions she will submit for the record. We have also some questions from Jim Lightfoot of Iowa, and Mike Strang of Colorado has some questions they would like you to respond to for the record.

[The information follows:]

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Questions Submitted by Congresswoman Smith

FLEXIBILITY IN COST SHARING

Question. In applying the cost sharing rules as contemplated in H.R. 6 and S. 1567, what flexibility would the Reagan Administration favor? Would the Secretary of the Army have the power to waive cost sharing requirements? Under what circumstances would he do so?

Answer. The Administration favors the flexibility provided in S. 1567 as currently drafted as that reflects the compromise reached by the Administration and the Senate Majority Leadership last summer. The Secretary's discretion to waive cost sharing requirements is limited to those cases where an ability to pay determination is allowed in the case of flood control, rural drainage, and agricultural water supply. In the case of any projects which produced benefit-cost ratios greater than one, we would not anticipate any finding that the sponsor would be unable to pay in accordance with the applicable cost sharing formula. Thus, the only circumstances where a waiver would be possible would be when the benefit-cost ratio for the project would be less than one and, under those circumstances, it is unlikely that we would seek funding for the project.

COST SHARING NEEDS TEST

Question. What is test for applying cost-sharing formulas? Is there a needs test? A capability or ability to pay test?

Answer. There are no new specific tests per se beyound the revised local cost sharing formulae which are designed to give a truer market test of project need. In other words our analyses are designed to more accurately determine project beneficiaries and emphasize a greater statement and commitment by those beneficiaries of the need for the work. Emphasizing the increased local sponsor cost sharing, places greater pressure to accurately evaluate project needs. What follows is the need for the local sponsor to play a larger role in project definition and design; and thereby, forge a stronger Federal, non-Federal partnership.

Specifically, cost sharing formulae apply to specific project features that are designed for specific project outputs. The formulae developed in S. 1567 are supported by the Administration as sufficient and accurate for testing the market need for each project.

As far as a "needs test" is concerned, I believe the benefit/cost analysis methodology is as good a model as there is for quantifying the economic needs for a project. The S. 1567 cost sharing formulae serve as the acid test for proving actual need of the work.

Finally, the capability or ability to pay test is not substantially different from previous Corps/local sponsor partnerships. The difference is in the time of payment, which for the most part, has been substantially reduced. To date, for those projects which are substantially designed and could be awarded for construction within the next 12 months, negotiations with local sponsors have centered around issues other than ability to pay.

COST SHARING FOR MITIGATION PROJECTS

Question. Suppose the Army Corps is found by Congress or by judicial decision to have caused certain damaging water problems. Would the Corps insist on cost sharing in this eventuality?

Answer. Generally, mitigation of damaging effects anticipated prior to construction of a project would be designed into the project and therefore would be cost-shared as part of the total cost of the project. If a project, after completion of construction, needed to be modified to rectify damaging conditions not previously foreseen, a local sponsor could be required to share in the modification costs where such costs, too, would be considered part of the total cost of the project. Cost-sharing of legal "damages," such as those a court might award in a negligence suit, obviously would depend on the specific facts and circumstances leading to the award and on the court's apportionment of responsibility. In addition, most project authorizations require, as one condition of local cooperation, that project sponsors hold and save the Federal Government free from all damages arising from the construction and operation of a completed project, except for damages due to the fault or negligence of the Government or its contractors. Again, the specific facts and circumstances surrounding any given problem will determine whether and to what extent damages will be cost-shared.

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REPUBLICAN RIVER STUDY COST SHARING

Question. Why is the Army Corps insisting on cost sharing even for feasibility studies, such as is contemplated on the Republican River in Nebraska, without any legislative authority for doing so at this time?

Answer. Both S. 1567 and H.R. 6 contain specific provisions on cost sharing for feasibility studies, and both would require cost sharing if enacted. Under existing law, however, we have sufficient authority to implement cost sharing, even though this authority has not been exercised until now. The following provisions provide authority for acceptance of non-Federal contributions:

(1) The Civil Functions Appropriations Act, July 19, 1937 (33 U.S.C. 701h), authorizes the Secretary of the Army to receive from States and politicial subdivisions thereof such funds as may be contributed by them to be expended in connection with funds appropriated by the United States for any authorized flood control work whenever such work and expenditures may be considered by the Secretary of the Army on recommendation of the Chief of Engineers, as advantageous in the public interest.

(2) Section 4, Rivers and Harbors Appropriations Act, March 4, 1915 (33 U.S.C. 560) authorizes the Secretary of the Army to receive from private parties such funds as may be contributed by them to be expended in connection with appropriated funds for any authorized work of public improvement of rivers and harbors whenever such work and expenditure may be considered by the Chief of Engineers to be advantageous to navigation.

By proceeding with implementation of study cost sharing under the Corps existing authority, the effectiveness of limited Federal planning funds can be maximized and those studies can move forward which result in projects which are implementable and fully supported by the non-Federal sponsors.

Question. I have a letter from my constituent members of the Lower Republican Natural Resource District dated January 29, 1985, informing me that your insistence on a 50% cost-share for a feasibility study of possible solutions to chronic flooding on the Republican River has forced them to reject the role of local sponsor for the study. Even more important, however, the NRD letter flatly states that your insistence on 50% non-federal cost-sharing will in fact be basically phasing out assistance for problems similar to ours, which have traditionally been an Army Corps of Engineers service to the people of the United States. . . . "With the current cost-share guidelines," this letter says, "a local sponsor will seldom have a means to provide the dollars needed to obtain Army Corps assistance." A copy of the letter is furnished for your information.

Is this premise true? How does the Administration justify withdrawal of this assistance?

Answer. It is difficult to imagine how a project could be implemented if the sponsor can not pay even for its study. We view these measures as a means to increase their participation in the planning process. Should we continue with full Federal funding of Corps of Engineers investigations as conducted in the past, I fear our program may be jeopardized in the face of huge deficits and possible budget cuts. I am sorry that the project sponsor objects to study cost sharing but to not cost share this study would not be fair to the other sponsors of Corps studies, many of which have flooding problems that are no less severe than those experienced in Nebraska.

COST SHARING FOR CONTINUING AUTHORITIES, SECTION 55, AND OTHER REMAINING ITEMS

Question. What is the Administration's policy with respect to cost sharing for activities carried out under Sections 14, 205, and other pertinent legislation under your Continuing Authorities Program, for Section 55, and for other Remaining Items?

Answer. Study cost sharing for the Continuing Authorities Program activities under Sections 14, 103, 107, 111, 205, and 208, will be comparable to studies which are specifically authorized. That is, the Reconnaissance Phase will be conducted at full Federal expense, and the Feasibility Phase will be cost shared 50/50 with the study sponsor. If the requirements of the Feasibility Phase can be met for less than $50,000 of Reconnaissance Phase funds, no study cost sharing with local interests will be required. The project cost sharing provisions agreed to by the Administration and the Senate Majority Leadership will apply to projects under these Continuing Authorities. The objective is to treat projects implemented under the Continuing Authorities Program comparably to those construction new starts which are specifically authorized.

Under section 55 of the Water Resources Development Act of 1974, the Corps of Engineers can provide technical and engineering assistance to non-Federal public

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entities on shore and streambank erosion. Assistance is generally limited to site inspection of the problem, advice on possible methods of protection, furnishing copies of existing pertinent technical data or reports, and review of plans and specifications prepared by others. No cost sharing is required for these services.

Other than the Continuing Authorities Small Projects Programs discussed above, the only Remaining Items involving cost sharing are Dam Safety Assurance and Aquatic Plant Control, both funded under Construction. General.

The FY 1987 budget request for the overall Dam Safety Assurance Program is $38,460,000, of which $17,460,000 is for continuation of construction for modification of five projects started in FY 1985 and FY 1986. Funds for these five projects, including $13,960,000 for four projects under Construction, General and $3,500,000 for one project under Flood Control, Mississippi River and Tributaries, are included in the budget request for each applicable Division. The $21,000,000 balance of this budget request that is carried under Remaining Items is to be applied toward initiation of construction on additional Dam Safety Assurance new starts which may be approved in FY 1986 and FY 1987 as a result of studies now underway. The Administration is proposing legislation under which 15 percent of the costs incurred in modifying Corps dams and related facilities because of new hydrologic or seismic data or changes in the state-of-the-art design or construction criteria deemed necessary for safety purposes, shall be assigned to project purposes in accordance with the cost allocation in effect for the project at the time the Dam Safety Assurance construction work is initiated; and non-Federal interests shall share the costs assigned to each purpose in accord with the cost sharing in effect at the time of initial project construction.

As prescribed by P.L. 85–500, as amended, costs for research and planning for the nationwide Aquatic Plant Control Program are 100 percent Federal, and sponsor States must provide 30 percent of the cost of control operations, as applicable. Under proposed legislation supported by the Administration, as contained in Sec. 701 (a)(7) of S. 1567, this 30 percent non-Federal sharing of control operations costs would be raised to 50 percent.

Question. Assuming cost sharing under these authorities, how and when will cost sharing be applied? Will there be a transition period?

Answer. With regard to the Continuing Authorities Program, study cost sharing has been implemented for all Feasibility Phase studies which are initiated after January 1, 1986. Any Feasibility Phase studies which were ongoing at that time are not subject to study cost sharing, nor are those meeting the $50,000 test just described in response to the last question. Project cost sharing will be applicable to those projects on which a construction contract is awarded after May 15, 1986, except Section 14, which will not be subject to changed cost sharing this fiscal year. Projects which the Assistant Secretary of the Army for Civil Works has agreed, as of February 10, 1986, to include in the construction program will be cost shared under the traditional procedures, even if the constuction contract is not awarded until after May 15, 1986.

Cost sharing under the Dam Safety Assurance Program, as prescribed in the Administration-proposed legislation, would become effective for construction new starts initiated after enactment of that legislation.

The 50 percent cost sharing for control operations under the Aquatic Plant Control Program, presently contained in S. 1567 as reported out on August 1, 1985, would become effective for separable elements of work initiated after June 30, 1985. The Administration will be guided by whatever effective date is indicated in legislation that may be enacted on this subject.

COST SHARING

Question. When using the term "cost sharing", please provide a discussion defining this concept. Will the Corps invariably require cash deposits "up front" before Army Corps work begins? What are the rules for in-kind cost sharing? Will local sponsors be allowed to pay the non-Federal shares in installment over time?

Answer. The term "cost sharing" refers to the division of the cost of a project between the Federal Government and non-Federal entities. Those entities may be either the project sponsor in the case of a flood control project or the users of the project as in the case of a water supply project. Cost sharing addresses cases where the non-Federal sponsor provides its funds during the construction period and also the situation where the Federal Government finances the project and is repaid overtime. In both cases, we say it is "cost sharing" but it is only when the sponsor provides the funds during the construction period that we say there is no-Federal financing of a project. When there is non-Federal financing, there is a lot of flexibility as to the timing of those non-Federal payments during the construction period. Ideally, we would like the non-Federal funds to be provided over the construction period in proportion to the Federal funding. For example, if the non-Federal share

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is half of the project cost, we would normally expect the funds to be provided on 50-50 matching basis with Federal funds. If, however, it is desirable for one reason or another for the non-Federal sponsor to pay according to a schedule which is disproportionate to the Federal obligations, then we can accommodate that. In summary, for each project that we undertake with cost sharing we negotiate a specific financing and, if appropriate, repayment schedule within the terms agreed to by the Administration and the Senate Majority Leadership last summer.

The rules for in-kind cost sharing differ by project purpose. For example, in the case of local protection projects, local sponsors are required to make in-kind contributions through the provision of lands, easements, and rights-of-way for the project. For most projects, however, there is no specific requirement for in-kind contributions. To the extent that we have flexibility over the terms of the Administration and Senate Majority Leadership agreement, we can negotiate in-kind contributions in lieu of cash payments.

Local sponsors may pay their share installments over time in virtually all cases if the time frame does not extend beyond the construction period. In some cases, sponsors can pay their share over the project life as long as the period does not exceed 30 years. In those cases, however, interest would have to paid at the cost of Federal borrowing for the period of the loan plus ⅛ of 1 percent premium to cover transaction costs associated with the granting of the Federal loan which would be implicit in such arrangement.

Questions Submitted by Congressman Lightfoot

PROBLEM AT BEDFORD, IOWA

Question. Does the Corps acknowledge that their work in straightening the 102 River has contributed to the hole being eroded in the dam due to the increased water velocity?

Answer. The scour hold is caused by channel degradation and the lack of an energy dissipator downstream from the structure. Degradation along the East Fork of the 102 River is the result of extensive channel straightening below Bedford by local interests over many years. Degradation at the structure may have been affected by the Corps project completed in 1967.

Question. Why has the Corps not addressed this problem under its emergency authority?

Answer. The emergency authority provided by P.L. 84-99 has been used several times since the project was completed to repair the project and to protect the water treatment plant and other facilities near the channel from the erosion associated with the severe degradation problem. In 1982, the Kansas City District constructed a grade-control structure under this authority to prevent further damage to the State Street bridge and the city's sewage treatment plant and to prevent additional degradation. However, this structure has not totally eliminated the scour problem at the dam. Further use of emergency funds has to be justified on an imminent failure basis. The scope of the current problem may be beyond the emergency authority.

Question. Does the Corps acknowledge that only a matter of time stands between the hole eroding the rest of the way through, and that the city stands to lose their water treatment plant and a county bridge if that should occur?

Answer. The scour hole will probably continue to increase in size and may undermine the dam resulting in its failure. The time frame for failure is very difficult to predict. Upstream bridges and buildings critical to the operation of the water treatment plant would not be imminent danger even if the dam were to fail. However, there are two buildings adjacent to the water treatment plant that might be impacted. One is used for storage and the other houses an emergency pump for withdrawal of river water. The emergency pump has not be used during the last five years.

Question. How does the Corps justify the cost sharing under these circumstances in which their work caused the damage?

Answer. The degradation and erosion problems experienced at Bedford, while occurring within the limits of the project constructed by the Corps, are due to degradation problems associated with widespread channel straightening. Any corrective action taken by the Corps would have to be economically justified and constructed under Section 205 of the Flood Control Act of 1948 or other authority. These authorities and current policies require cost sharing and other local participation in both studies and implementation of any recommended plans.

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Questions Submitted by Congressman Strang

FOUNTAIN CREEK PROJECT

Question. Based on information provided the Congress by the Corps of Engineers, the Fountain Creek flood control project in Pueblo, Colorado, has a positive benefit to cost ratio. The basis for evaluating the benefit-cost ratio for this project is the same as used for virtually all other similar Corps projects. You have personally on at least two occasions, written to Pueblo city officials, congratulating them on the degree of local funding support they have demonstrated and specifically expressed your personal support for the project. Initial construction funding of $1.36 million was included in the FY '86 budget proposal from the Administration. The project was said to have been a high priority Corps project.

Based on these facts, I would appreciate a detailed response as to why the Administration decided not to include an initial funding request for the Fountain Creek project in its FY '87 budget proposal?

Answer. We recognize the continued support of the local sponsor for the Fountain Creek at Pueblo, Colorado, project and support the efforts expended to date by the sponsor to provide the traditional items of local cooperation and cash contribution during the construction period. It is unfortunate that the project which was a recommended new construction start for FY 1986 was not included in the Fiscal Year 1985 Supplemental. However, while the project met our preliminary selection criteria for a new start in the Fiscal Year 1987, the Administration, in its effort to achieve the required $144 billion deficit ceiling, imposed a more rigid criterion on all new start construction candidates. Final selection criterion required a benefit-cost ratio greater than unity at a 10 percent discount rate; and because the Fountain Creek project did not meet this criterion, it was not recommended for a new start in Fiscal Year 1987.

PROPOSAL FOR COST SHARING MR&T PROJECT

Mr. MYERS. Thank you very much for your testimony.

Mr. BEVILL. The chair recognizes Mrs. Boggs.

Mrs. BOGGS. Thank you, Mr. Chairman.

It is very nice to have all of you here. We thank you so much for your very full and interesting commentaries to us and for your optimistic outlook. We certainly share your optimistic outlook, despite the fact that we have been disappointed from year to year and have been unable to have a bill that can be passed and approved by both Houses and signed by the President.

Of course, the one bill, as the chairman pointed out, that has indeed gone through that process concerns the Mississippi River and its tributaries, and what aspects of the project are you proposing for cost sharing? And what was the status of each of these aspects in 1985?

Mr. DAWSON. Congresswoman Boggs, we could provide you a list by name of each part of that and status on that date. If I might take just a minute and tell you generally what we are looking at.

If a project is already underway, we don't feel cost sharing should be changed. We don't feel provisions of the Senate bill which would be signed today, if it were on the President's desk, would change that. What we are looking at is about 20 percent, in other words, over $4 billion of the remaining work would not change one iota under the bill, in our judgment.

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SEPARABLE ELEMENTS

Mr. DAWSON. What would change and what we think should change are those separable elements of the MR&T project that are on the tributaries and that don't have as their primary purpose contributing to the overall project but are more a local flood protection project, just like any other project in the rest of the country. And we cannot find a way, and we have tried, to tell the sponsor of one project that they do not have to cost share, and then 100 miles away we have projects like that and say to those folks, "Sorry, you must cost share, but your neighbor does not", when the projects are identical.

So we do recognize the very special nature of MR&T, the very special burdens. We think the interpretation we are putting on the Senate bill is something that is very reasonable, and yet it reflects the need to be consistent throughout the rest of the country. We don't have a closed mind on what constitutes a separable element. If there are other views that local people or you or others expert in the area want to bring forth to say "Wait a minute, this particular project is not a separable element or that work has already begun", we will certainly listen to that.

What we are more afraid of, to be frank with you, is that we will lose this entire bill if we don't do some cost sharing on MR&T, and we think we can do that and still recognize the very special nature of that unique project.

Therefore, the aspects which we are proposing for cost sharing are the unstarted separable elements of the project, as shown on the list which I will provide here for the record.

[The information follows:]

Status of MR&T Separable Elements

Separable Element:	Status as of 15 August 1985
Atchafalaya Floodway System (Authorized by FY 1985 Supplemental Appropriations Act).	Unstarted.
Eight Mile Creek	Unstarted.
L'Anguille River	Unstarted.
Eastern Rapdies—South Central Avoyelles	Unstarted.
Bayou Cocodrie & Tribs	Unstarted.
West Kentucky Tribs	Unstarted.
Tensas Basin	
Boeuf & Tensas Rivers—Tensas River	Unstarted.
Lake Chicot Pumping Plant—Recreation	Unstarted.
Red River Backwater Area—Below Red River	Unstarted.
Yazoo Basin:	
Grenada Lake—Recreation Facilities	Unstarted.
Yazoo Backwater-Pumping Plant	Unstarted.
Yazoo Backwater-Rocky Bayou	Inactive.

CURRENT PROVISIONS

Mrs. BOGGS. Thank you, Mr. Secretary, but, of course, we already have a law. We have a law that has been signed and is in place, and all of these considerations were debated ad infinitum, and de-

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spite all of the arguments that you have just put forth about some of the projects, we defeated the Edgar amendment by a huge majority, so that the Congress has spoken in this regard, and that is the law, and it is what you really have to comply with. You can't select out what you are going to comply with in the law.

Mr. DAWSON. No, ma'am, and we intend to comply with that. My point is, and as we have all talked about, we need to get an omnibus bill passed which will be a new addition to that body of law. I am submitting to you for your consideration what I believe to be a fact: if we don't address cost sharing in some acceptable fashion, and it has got to be acceptable to you and to others, as well as to the administration, then I submit to you we will not get an omnibus water resources development bill, and the Army Civil Works Program, accordingly, will go downhill.

But you are absolutely right, until we do that, what you pointed out is the law and will have to be followed.

Mrs. BOGGS. Since you are going to provide something for the record for me, will you also please provide a narrative history of the Mississippi River and the tributaries project, including its origin, its purpose, the amount of Federal and local funds expended and an estimate of the property value protected through the years?

Mr. DAWSON. I will be pleased to furnish the information as you requested.

[The information follows:]

MISSISSIPPI RIVER AND TRIBUTARIES ORIGIN, PURPOSE, PROPERTY VALUES, AND FUNDING

The Mississippi River drains more than 1,245,000 square miles in 31 states, or 41 percent of the land area in the 48 contiguous states. It has the third largest drainage basin in the world.

The potential power in the Mississippi River during flood stage from Cario to the Gulf is about 60 million horsepower. Impossible to harness, this force is dissipated by eroding streambanks, transporting silt, and moving water. In flood stage, uncontrolled Mississippi River water could cover up to 30,000 square miles.

In response to these threats of floods and erosion, the people of the basin started building protection levees in the mid-Nineteenth Century. Over $125 million was spent by basin residents before the first Federal assistance was received in 1882.

The Federal Government organized the Mississippi River Commission in 1879, signaling the start of Federal participation in the cost of flood control levees along the Mississippi River. The Commission supervised expenditure of about $90 million from 1882 through 1926, $15 million of which was contributed by Delta residents. In addition, state and local organizations spent another $152 million on flood control during this period.

A total of nearly $300 million was spent by basin residents through 1926 on flood control alone, not counting flood damages and expenses by individuals. Flood damages from just the 1927 flood were estimated to exceed $236 million. That year a brown tide of Mississippi River water breached levees and spread out nearly 100 miles at times, inundating towns and farms. A single levee break on the east bank flooded 2.3 million acres in the Mississippi Delta, affecting nearly 173,000 people. In total, 16.6 million acres were flooded in seven states, 162,000 homes were inundated, $102.6 million in crop losses occurred, 425,000 people were displaced, and as many as 500 people were killed. Following that devastating 1927 flood, the Mississippi River and Tributaries (MR&T) project was authorized in 1928.

Although still not complete, the MR&T project has already resulted in flood control benefits to the Nation far in excess of cumulative construction investments of approximately $3.7 billion made from 1928 through 1984. Of that amount, total expenditures for levees by state and local organizations exceeded $922 million. The project prevented potential damages estimated to be $31 billion during the 1983 and 1984 floods. Thus, in just two years, the flood control benefits were nearly nine

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times the cumulative investment in the project over the last half century. Total benefits over the life of the MR&T project have been approximately $100 billion.

Mrs. BOGGS. And what kinds of contributions are the local authorities required to make in the MR&T project? Can you give a dollar value to the local contributions through the years?

CURRENT MR&T LOCAL CONTRIBUTIONS

Mr. DAWSON. In view of the national aspect of the flood control problem from the standpoint both of the cause and of the effects of the floods, and in view of the large sums spent in the past by the people of the valley for flood protection, the sacrifices they have made in meeting their allotments, the great losses suffered in the 1927 flood, and the larger expenditure required for execution of the comprehensive plan, the Mississippi River Commission believed that the United States should bear a larger proportion of the cost of construction than in the past, and that of the States or local interests be as small as consistent with the results desired. Recognizing that the proportion must be determined in the wisdom of the President and Congress, the Mississippi River Commission proposed a division by which the United States bear 80 percent and local interests 20 percent of the cost of levee cosntruction and contract work in general; and by which the United States bear 50 percent and local interests 50 percent of the cost of special ring levees proposed at certain locations. The local interests were also expected, under the project, to furnish rights of way, and protect the United States against charges for flowage easements and damages. The total cost of the MR&T project at the time of its authorization was $296,400,000 of which $37,400,000 was assigned to local interests. These provisions of local cooperation were in general accord with the existing policy of the President at the time and the precedents established by Congress, and were enacted into law in the Flood Control Act of May 15, 1928. It is pertinent to point out that the 1928 Act authorized primarily the features along the mainstem of the Mississippi, and took into account that local interests had already spent close to $300 million on their own behalf. However, there have been over 24 Amendments to the 1928 Act which authorized additional work on the tributaries and in a large number of cases the local cooperation requirements are less than the traditional lands, easements, rights-of-way, relocation and operation and maintenance responsibility. At this time the total project cost estimate is over $9.1 billion and Federal and non-Federal costs to date have been over $3.9 billion and $9.22 million, respectively. The cost sharing requirements vary considerably for each of the amendments to the original 1928 Act. For the record, I will provide a comparative tabulation which illustrates the varying degree of those requirements relative to some of the authorized features within the MR&T project area.

[The information follows:]

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LOCAL COOPERATION REQUIREMENTS

Project	Traditional cost sharing for construction of flood control features
Atchafalaya Basin	Locals pay administrative costs of rights-of-way (r-o-w) for levee and levee drainage and provide interior drainage in Upper Pointe Coupee Loop System.
Bayou Cocodrie and Tributaries	Except at Bayou Courtableu locals agree to: (a) provide lands, easements, and right-of-way; (b) hold and save the Federal Government free from any damages and claims; and (c) operate and maintain the project (ABC's).
Channel Improvement	None for construction.
Lower Red River So. Bank Levees	None for construction.
Mississippi River Levees	Locals pay for r-o-w for levee raising and strengthening.
Mud Lake Pumping Station	Locals provide ABC's.
Old River	Locals provide r-o-w for levee foundations and for levees on the Miss. R. Main Stem.
Reelfoot Lake—Lake #9	Locals provide ABC's.
St. Francis Basin	Locals provide ABC's for St. Francis Lake and Control Structures and also contribute a portion of Fish and Wildlife (F&W) related costs.
Sardis Dam	None for construction.
Tensas Basin:	
Boeuf and Tensas Rivers	None for construction
Red River Backwater	Locals agree to not raise levees and provide ABC's for Sicily Is. pumping plants.
Below Red River (separable element)	Locals provide land for Pump Plant.
West Kentucky Tributaries	Locals provide ABC's.
West Tennessee Tributaries	Locals provide ABC's.
Yazoo Basin:	
All except Yazoo BW PP & Rocky Bayou (Items 2 and 3).	Locals pay 25% of F&W costs.
Yazoo Backwater Pumping Plant (sep. elt.)	Locals pay 25% of F&W costs.
Rocky Bayou (Items 2 and 3) (sep. elt.)	Locals pay 25% of F&W costs.

MR&T PROJECT STATUS

Mrs. BOGGS. Overall, what percentage of the project is completed? What percentage of the channel work is complete? What percentage of the levee work is complete? Where is the bulk of the uncomplete work located?

Mr. DAWSON. At present, the MR&T project is about 76 percent physically complete overall. There are about 1610 miles of levees authorized for the Mississippi river below Cape Girardeau, of which more than 99 percent are in place with 72 percent built to approved grade and section. The Main Stem Levee System consists of approximately 2200 miles nearly all of which are in place with 71 percent completed to approved grade and section. Included in this system are additional levees and structures along the south bank of the Arkansas River, 85 miles; along the south bank of the Red River, 59 miles, all completed; and 449 miles in the Atchafalaya River Basin, all in place with 58 percent completed to grade and section. Of the authorized 699 miles of berms, 70 percent are complete. Graveled or hard-surfaced roads have been constructed on 1,809 miles of these levees. About 88 percent of the channel work is now complete. The bulk of the uncompleted portion of the project is located along the lowermost reach of the river areas.

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STATUS OF NEW PORT PROJECTS

Mrs. BOGGS. Thank you very much.

Could you please give us a status report on the major deep navigation projects authorized in Public Law 99-88. How are negotiations proceeding with the different local assuring authorities?

Mr. DAWSON. Yes, ma'am, I would be delighted to, and General Hatch may want to add to this. We are very, very pleased with the progress of our negotiations with the ports. I think, without exception, we made good headway. I know in Louisiana we have gotten excellent cooperation and a great deal of work has been expended by both the state people and the port people.

What we are finding is that as cost sharing is confronted, the size and scope of the projects are dwindling. But, we still anticipate having some very major Corps development projects and certainly feel if we can get the ad valorem fee underway come June 30th, there is no reason we can's move out aggressively with actual construction on those port projects.

General HATCH. I would like to provide you with the status as of this week of the project entitled "Mississippi River Ship Channel". We list that as a "very likely" project for achieving a local cooperation agreement prior to the May deadline. We don't anticipate any great problem. I will say that we anticipate phased construction, however, with a scheduled 50-feet deep draft channel to river mile 181 with the remainder of the project at this time unscheduled.

Mrs. BOGGS. Thank you very much. That was a question I was going to ask later. You anticipated it.

General HATCH. That was just an overview; I knew you would be interested. I will provide a full status report for the record.

[The information follows:]

NEGOTIATIONS ON DEEP DRAFT PROJECTS

The four deep draft navigation projects authorized in PL 99-88 are Mobile Harbor, Mobile, AL; the Mississippi River Ship Channel, Gulf of Mexico to Baton Rouge, LA; Norfolk Harbor, VA; and, Baltimore Harbor, MD and VA. Each of these involve a deepening of existing channels and basins to accommodate today's more efficient large bulk carriers and improve the Nation's ability to compete in the world market. The following reports on the project, project scope, and current status of negotiation with the local sponsor of each project.

MOBILE HARBOR, MOBILE, AL

Scope: Phase I—deepen entrance channel to 57 feet, bay channel to 55 feet and McDuffie Island Turning Basin to 40 feet. The remainder of the project is unscheduled.

Status: Mobile District is negotiating a local assurance agreement with the Alabama State Docks Department, which has full financing authority. State funding will come from revenues from dock operations and from oil-lease funds, industrial development bonds and state appropriations. Most issues have been settled except for the determination of incremental (over 45') maintenance dredging costs. The outlook is very likely that a local cooperation agreement will be signed by 30 June 1986.

MISSISSIPPI RIVER SHIP CHANNEL, GULF OF MEXICO TO BATON ROUGE, LA

Scope: Phase I—deepen river channel to 50 feet from the Gulf of Mexico to mile 181 above the Head of the Passes. Provide channel training works, saltwater intrusion mitigation and New Orleans Harbor features. The remaining work is unscheduled.

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Status: New Orleans District is negotiating a local cooperation agreement with Louisiana State Department of Commerce. The Department of Commerce was legally empowered on 13 September 1983 to acquire lands, easements, rights-of-way and other rights and interests required for the project and to provide for the non-Federal financing of the work. No significant issues are outstanding and the outlook is very likely that a local cooperation agreement will be signed by 15 May 1986.

BALTIMORE HARBOR AND CHANNELS, BALTIMORE, MD AND VA

Scope: Phase I—deepen channels to 50 feet, but with reduced channel widths. The remaining phase, widening to authorized dimensions, is unscheduled.

Status Baltimore District is negotiating a local cooperation agreement with the Maryland Port Administration. State funds have been appropriated to match anticipated Federal funds. No significant issues remain and the outlook is very likely that a local cooperation agreement will be signed by mid-April 1986.

NORFOLK HARBOR AND CHANNELS, NORFOLK, VA

Scope: Phase I—deepen outbound channels to 55 feet. Deepen ocean channel to 57 feet, Elizabeth River and Southern Branch to 45 feet, and Southern Branch to 40 feet.

Status: Nofolk District is negotiating a local cooperation agreement with the Virginia Port Authority. The final agreement will be signed by the Governor of Virginia. No significant issues remain and the outlook is very likely that a signed local cooperation agreement will be signed by mid-May 1986.

ATCHAFALAYA BASIN

Mrs. BOGGS. Public Law 99-88 provides legal authority for the Corps to expand its responsibilities in the Atchafalaya Basin, which is an integral part of the flood control plan for the main stem of the Mississippi River, and the basin has been the subject, of course, among the most hotly contested water resource controversies in a decade. Former Governor Dave Treen, who is our former colleague in the House, was successful in crafting the compromise for the basin that addressed its flood control management and environmental preservation needs.

In enacting Public Law 99-88, Congress specifically endorsed that plan as contained in the report of the Chief of Engineers, dated February 28, 1983. It was a specific endorsement by the Congress in that act.

What are your plans for carrying out the Congressional intent for the implementing of this plan? Specifically, what is your policy regarding land acquisition in the basin, and how does this square with the Congressional intent?

Mr. DAWSON. Yes, ma'am. We have a great deal of concern, Congresswoman Boggs, about spending our limited flood control dollars. As you know, representing the district you do, we don't have enough flood control dollars to do the work that we all know needs to be done.

So we are very concerned about taking those flood control dollars and diluting them too much in the acquisition of recreational and environmental lands. We do feel that there is some great validity in some of the purchases that have been proposed. It is a question, I think, of whether the money comes out of the Corps of Engineers' flood control budget or out of the Department of Interior's environmental enhancement budget or some other budget.

Certainly if that project does proceed, then the legal constraints placed by the Congress already or in the future will have to be followed. My suggestion and request to this committee would be to

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take a look at the flood control aspects of that project versus the recreational and environmental aspects, which I am not saying are not important, but I am concerned that the more—we are talking about a $1 billion project here—that the more we put on recreation and environment, the less we have for flood control, and it is a tough choice, but one we are trying to wrestle with.

PROJECT COMPROMISE

Mrs. BOGGS. Mr. Secretary, Public Law 99-88 specifically endorsed the plan as contained in the report of the Chief of Engineers, dated February 23, 1983, and that was the great compromise report that was the state compromising, the land owners compromising, the former land developers compromising, the environmental groups compromising, the Corps and the flood control areas compromising, everybody getting together in order to compromise this whole endeavor.

As you know, the flood control components of it had to be changed. So it was accepted in toto and specifically endorsed by the Congress. It is not something that is really subject to this kind of activity.

BUDGETARY CLIMATE

Mr. DAWSON. Well, Madam Congresswoman, this agreement was reached, as you know far better than I, in the late 1970s, when, I believe, we had a different budgetary climate. All of the chairs around the table were filled with everybody ready to grasp on the Federal wallet. And I think one solution at that time was to resolve all disagreements by reaching into the Federal wallet.

And now we are in 1986 and having to face the fact that we don't have the money that any of us would like to have for flood control. If the Congress sticks with that judgment that you have alluded to, then obviously that is the way it has got to be.

My reason for going into this and trying to respond as well as I can to your questions is to urge you and the committee to consider the "either/or" aspects of this budgetary choice. Obviously, though, I recognize that you will determine very likely, as you continue to address this project, what happens.

COMMITMENTS TO DATE

Mrs. BOGGS. Perhaps 1978 was a time, but it was after 1978 that Governor Treen was able to make the compromises that were necessary, and the state has paid a great deal of money, and it was verified by Governor Edwards, who came in afterwards. The land owners have given up a great deal. It was a compromise across the board with a great deal of input from the local area and from the state area, and the floodway can only be enhanced by making certain that the environmental aspects of the basin are enhanced.

So that it is a total package, and it took years to work out, and the Congress specifically said that the Chief of Engineers report that was dated February 28, 1983, is what the Congress approved in Public Law 99-88.

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Mr. DAWSON. Yes, ma'am, and I understand the good point you are making.

Our concern is that the Corps has already acquired over 112,000 acres for Fish and Wildlife purposes, the Department of Interior manages almost another 250,000 acres, the state has another 331,000. Maybe that is not nearly enough, maybe it is.

Our point, again, is to engage in the debate and urge the committee and the Congress to make those "either/or" choices. We recognize you will make them, and we won't.

MISSISSIPPI RIVER—GULF OUTLET PROJECT

Mrs. BOGGS. Thank you, Mr. Secretary. Your budget materials of the Mississippi River-Gulf Outlet indicate that although this project will be cost shared, that apportionment of costs is being deferred pending resolution of the cost sharing policy and other legislative issues. Why does this project not fit into the concept of cost sharing and financing advocated by the administration? Are there any unresolved legal issues involved there?

Mr. DAWSON. If you don't mind, perhaps we could supply that for the record. I know that we are working very hard on that project. It is one of the biggest that we have before us, and, as you know better than I, it is a very tough shifting problem there, and it is one we are going to address one way or the other. But we will get the details to you on that, if we may, for the record.

[The information follows:]

MISSISSIPPI RIVER-GULF OUTLET

This project will be cost shared consistent with the cost sharing and financing concepts agreed to by the Administration and Congress. Pending legislation contains differing provisions concerning the project. H.R. 6 has a specific provision regarding cost sharing for the project, Section 757, which is not similar to the cost sharing and financing proposals in S. 1567. Furthermore, the Corps is currently studying whether repair or replacement of the existing lock at the existing site is needed. An apportionment of costs is being deferred pending completion of the study and resolution of cost sharing policy.

MISSISSIPPI RIVER, BATON ROUGE TO THE GULF OF MEXICO

Mrs. BOGGS. Two years ago this Subcommittee directed the Corps to develop an uninterrupted construction schedule for the completion of the Mississippi River, Baton Rouge to Gulf of Mexico project by September 1994. The plan was to have been provided to the Committee within 30 days of enactment. What is the status of this schedule?

Mr. DAWSON. The schedule has been developed only to the point represented in our budget request. First, I think it must be stated that although a schedule beyond the budget year has not been fully developed, we are proceeding with the project. The Fiscal Year 1987 request contains funds to perform work of a critical nature. All of the funds heretofore appropriated for this project have been applied to performing needed critical work on the project. Also, we transferred additional funds to the project late in Fiscal Year 1985 in order to advance critical items of work.

However, this is a large project, and it represents a sizable investment of Federal resources. For this reason, I have asked my

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staff to perform a careful review of the General Design Memorandum or GDM. Until we have completed this review, I am not in a position to commit to a schedule beyond critical work. Before we proceed with the full scale of this project, we must be sure that the recommended solution will indeed work. This project is much too costly to do otherwise.

Mrs. BOGGS. Can you tell us if the schedule calls for completion of the project by 1994?

Mr. DAWSON. Since the schedule at this time does not reflect initiation of work beyond the fiscal year 1987 budget, the completion date is indefinite.

Mrs. BOGGS. Please provide the Subcommittee with a copy of the schedule.

Mr. DAWSON. A copy of the schedule will be furnished to the Subcommittee when it is developed.

Mrs. BOGGS. Thank you, Mr. Secretary.

RED RIVER WATERWAY

The fiscal year 1986 appropriation bill included language directing the Corps to initiate continuing contracts in fiscal year 1986 for the continuation of lock and dam number three, realignment on the Red River waterway and bank stabilization measures at pools three, four and five, and recreation at pools one and two. $5.7 million was added for those purposes. Will all of this work be started in 1986?

Mr. DAWSON. On locks and dams one and two, as you know, Congresswoman, we are moving out. On lock and dam three, frankly, we are going as slowly as the law will let us go because we are very concerned about the huge expenses yet to come. I believe we will obligate the $5.7 million as you directed us to, but we are trying to confine that to contracts that can be completed in one year as opposed to ongoing obligation.

Let me ask my colleagues if there is any correction to that.

General HATCH. No, that is exactly right.

Mrs. BOGGS. In light of last year's appropriation and interest reflected by this Committee, will you please explain the FY 1987 budget request and the Administration's intentions for continuation of this project?

Mr. DAWSON. The FY 1987 budget request of $38 million is substantial and is the third largest funding request in the Construction, General, Appropriation in the nation. Funds will be used to complete construction of John H. Overton Lock and Dam, continue the comprehensive plan to stabilize and realign the river, initiate three and complete two recreation areas in Pools 1 and 2, and continue planning in Pools 3, 4, and 5.

No decision has been made to initiate construction in Pools 4 and 5 or to continue construction in Pool 3 beyond those funds specifically appropriated in P.L. 98-360 and P.L. 99-141. I would like to explain our reasons for not taking the initiative to schedule this work.

First, the project represents a very large committment of very scarce budgetary resources in a time of record deficits. In spite of 15 years of funding, the funding required after FY 1987 to complete

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the project is currently estimated to be nearly $800 million at current prices. This is more than for any other navigation project currently under construction and is more than the total cost of any prospective waterway investment.

Second, we have volunteered no money in the FY 1987 budget beyond Pool 2 because of the project's low economic return. When this project was first funded for construction in FY 1973, it had a remaining benefit—remaining cost ratio of 1.2 at a 3¼ percent discount rate. Despite the expenditure of more than half the cost of the project, and receipt of only a small share of project benefits, the remaining benefit-to-cost ratio is substantially below unity when evaluated at the 8⅝ percent discount rate currently used to evaluate new work. The low returns from this investment put it in the class of projects on which we are unable to make any major budgetary commitment.

Today's economic realities do not allow us to support, in this budget, public investments which do not have demonstrated benefits commensurate with their costs. Notwithstanding the fact that the FY 1987 budget does not contain follow-on funding for Lock and Dam #3, we will certainly continue to carry out the law and will take all appropriate steps to make certain that there are no unnecessary delays which might slow our ability to carry out the law.

RAILROAD WASHOUT

Mrs. BOGGS. Has the bank stabilization emergency been taken into consideration?

Mr. DAWSON. We are very concerned about that. I assume you are speaking of the railroad washout problem.

Mrs. BOGGS. Right.

Mr. DAWSON. We simply don't have the legal authority, Congresswoman Boggs, to proceed because that would be protecting a private piece of property. We understand the railroad either already is or is contemplating taking action on its own to preclude that washout. We tried our best to find a legal authority and simply could not find any way under existing law to do that.

OUACHITA AND BLACK RIVERS

Mrs. BOGGS. $6 million has been appropriated for the construction, with full Federal expense, of recreational development in the Felsenthal area of the Ouachita and Black River projects. Have those funds been made availabe for this purpose and what facilities do you plan to construct and what is your schedule for doing so?

Mr. DAWSON. I will supply the details for the record.

Let me just say, I was at Felsenthal last week and had a delightful barbecue lunch with Congressman Anthony, and it really is a beautiful area. From all I could tell, there is local satisfaction on the work that the Corps is doing. We do have a considerable amount of money in the pipeline, but I will get you the details, if I may, on that.

[The information follows:]

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OUACHITA AND BLACK RIVERS

These funds are available and will be allotted for this purpose as soon as the scope of the facilities has been defined, reviewed and approved. The first designs are already progressing through the system. The following table shows the recreation areas planned and the anticipated dates for contract awards. All work is expected to be completed by September 1988.

[The information follows:]

OUACHITA AND BLACK RIVERS

[Scheduled Recreation Facilities]

Area	Type of Facility	Scheduled Award
Felsenthal Lock and Dam	Launch Ramps & Restrooms	July 1986
Crossett Harbor	100-site Camping Area	September 1986
Grand Marais	25-site Camping Area	September 1986
Eagle Lake (USFWS Site)	Launch Area	September 1986
Calion Lock and Dam No. 8	Launch Area	September 1986
Nursey Pond	Pond & Outlet Channel	September 1986
Calion Lock and Dam	Restrooms & Parking Area	September 1987

GRAND ISLE HURRICANE DAMAGES

Mrs. BOGGS. Could you describe the damages caused to Grand Isle by the hurricanes last year?

General HEIBERG. In the winter of 1984 to 1985, the beach experienced damaging erosion due to winter storms in five areas totaling approximately 10,600 feet in length with the loss of approximately 230,000 cubic yards of sand. This comprised approximately 25 percent of the project length and roughly eight percent of the total volume of sand placed in the construction of the project. The Corps and local assurers were concerned by the isolated locations of the losses and were moving toward implementing corrective action when Hurricane Danny hit in August 1985. Hurricane Danny caused the loss of appoximately 70,000 additional yards of sand from essentially the same five problem areas on the beach. In early September 1985, Hurricane Elena caused an additional loss of approximately 40,000 yards of the beach. With the passage of each storm, the damage to the five problem areas became worse and represented an increasing threat to the integrity of the yet undamaged dune. Realizing this, the Corps and Louisiana Office of the Public Works were finalizing revised construction plans for corrective measures when Hurricane Juan struck in late October. Hurricane Juan caused the loss of an additional 370,000 yards of sand. It leveled the sand dune at two locations over a distance of roughly 6,000 feet. It caused loss of a portion of the dune for a distance of roughly 14,000 feet, and it caused additional damage to the beach. The areas most severely impacted by Hurricane Juan were those areas which had been damaged by previous events.

GRAND ISLE PROJECT

Mrs. BOGGS. I was pleased to see there is $1 million requested for 1987 for Grand Isle. Can you describe for us what the purpose of the $1 million is? Will this project that you are going to spend the money on be able to withstand future hurricanes?

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Mr. DAWSON. If I may ask Mr. Cluff to respond.

Mr. CLUFF. As you know, the hurricanes this year at Grand Isle did a considerable amount of damage. We lost a lot of sand from the beach also. We have included, as you said, $1 million, and that is to move ahead, finish construction, and do some repair on portions of the project not specifically damaged during the hurricanes.

Mostly the money is to reinforce the dune. Where we lost the dune, that makes us weak in terms of future hurricanes. We are most anxious to get that restored.

STATUS OF WOMEN AND MINORITIES

Mrs. BOGGS. Last year you gave me a very thorough breakdown of women and minorities by grade in the Corps. Can you report any significant progress in the past year in improving the status of women and minorities?

Mr. DAWSON. We do have a full report again for you, Congresswoman, knowing your strong interest and careful oversight of that issue. General Hatch can give you a quick overview if you like, and then we will give you the full report for the record.

General HATCH. During fiscal year 1985, minority percentage representation in the Corps' engineering and scientist career program exhibited some positive changes. In grades five through 12, minority representation of 11.9 percent doesn't match or exceed the fiscal year 1985 projected goal of 12 percent, but came close to it. Minority representation in grades 13 through senior executive service was 7.3 percent, which exceeds both the fiscal year 1984 and fiscal year 1985 projected goals. The latter goal was 6.7 percent. Minorities in our engineer and scientist group program exhibited a numerical increase of 97.

TANGIBLES OF SUCCESS

Mrs. BOGGS. Thank you very much.

General HEIBERG. May I add a footnote to that? I was struck last week that we are indeed moving ahead in reality. I took part of my team to go look at part of our Corps of Engineers, and when I looked around the airplane, and we hadn't really looked at it that way, but of my team of eight or nine people, three of them were women, one of whom is behind me. She is our new equal opportunity officer, Ms. Anita Gomez-Bennett, and one of the members of my personal staff, so you will find women on my staff very evident. Their presence is useful and helpful.

Mrs. BOGGS. How are you doing, General, on what I know has been a recruiting program for minority and women——

General HEIBERG. I can be less positive about the engineering students, but I am happy to report last week I went up to West Point and handed six fine young women at West Point their tassels. They are all quality women, graduating near the top of their class, and I am delighted to have them joining the Corps of Engineers. I would like to have more than six out of the 103, but it is better than I reported to you last year. As Mr. Dawson indicated, we will provide a full report for the record.

Mrs. BOGGS. I thank all of you very much.

[The information follows:]

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EMPLOYMENT OF MINORITIES AND WOMEN

The numerical representation of minorities and women within the Corps of Engineers continues to show steady increases in all grades, except grades 16 through senior executive service, where their representation has declined by one (1) each respectively. In September 1984, minorities made up 16.3% (7,074) of the Corps workforce. As of September 1985 they comprised 18.4% (8,410), an increase of 1,336. During the same time frame women had a representation of 27.5% (11,917) in 1984; by 1985 they comprised 28.7% (13,134), an increase of 1,217. Since 1980 the number of minorities has increased by 2,093 and women by 3,174.

In the engineer and science occupations in September 1984 minorities represented 10.0% (1,264); in September 1985 10.6% (1,370) for an increase of 106. Women, in September 1984 represented 7.0% (876); in September 1985 they represented 7.5% (975) for an increase of 99.

Since 1980, in Engineer and Scientist occupations, minorities have increased by 503; women by 507.

RECRUITMENT ACTIVITIES

The Corps maintains relationships with colleges and universities throughout the United States for purposes of recruiting students into careers with the Corps. During fiscal year 1985 approximately 130 recruitment and interview visits were made to colleges and universities. Approximately 80 visits were made for reasons such as participation at career days. As part of this college recruitment activity, the Corps schedules visits to Historically Black Colleges, the University of Puerto Rico, and participates at special events sponsored by minorities and women's organizations, such as National Society for Black Engineers Career Fair, Urban League Career Day, and the Minority Career Fair. In addition the Corps has placed advertisements in a number of minority magazines such as the National Society for Black Engineers Journal, The Hispanic Engineer and the U.S. Woman Engineer.

PROBLEMS WITH COST SHARING

Mr. BEVILL. The Chair recognizes Mr. Rudd.

Mr. RUDD. Thank you. I thank you for being here. And I also want to thank you for favorable consideration of the State of Arizona in the past. You know, we have got a lot of talking going on here about cost sharing. Almost every other word is "cost sharing".

I can appreciate what Chairman Whitten had to say about the land, its value to the people and that goes without saying, of course. But this cost sharing thing seems to be a legacy, I believe, that was left by David Stockman, and in everything we do we are talking about cost sharing.

There are a lot of problems with cost sharing I see, and I would like to explore a few of those with you. What are you going to do about cost sharing on Indian reservations? How do you propose to handle that?

Mr. DAWSON. Are you speaking of water projects where the Indian reservation—

COST SHARING OF INDIAN PROJECTS

Mr. RUDD. All of the Indian projects—you are talking about cost sharing, but how are you going to have the Indians get involved in cost sharing?

Mr. DAWSON. Well, sir, assuming the Indian nation or reservation would be the local sponsor, which might or might not be the case, but if it were the case, we would envision there would be cost sharing, just as any other nonfederal entity would be.

The point I want to make quickly, because I think it is relevant—

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Mr. RUDD. Their resources are Federal funds.

Mr. DAWSON. The way we are trying to stretch the cost sharing is that the benefits which are later to flow from the project will finance that contribution, the non-Federal contribution. Certainly some of those funds might be Federal, and we would not shun those funds, but we would try to treat them as we would any other non-Federal sponsor, keeping in mind those benefits that are going to flow if it is a good project, as we think most of these are, will generate new dollars, not Federal grant dollars they have gotten from another source, but new sources of finance.

Mr. RUDD. That is how we have been paying for these projects all along, isn't it?

Mr. DAWSON. To some extent. With the budget pressures we see ahead, we are simply going to have to increase that, we believe.

Mr. RUDD. If you are going to apply cost sharing—you tell me you are not going to apply cost sharing, in effect.

Mr. DAWSON. No, sir, I didn't intend to say that.

Mr. RUDD. I say if they have Federal dollars involved, they will have to use them. Of course, they will. They have no other resources.

BASIS FOR PAYMENT

Mr. DAWSON. What we are saying is if it is a good, strong project, that that project and benefits that flow from it will produce financing mechanisms.

Mr. RUDD. That is what I am saying. That is what we have been doing all along. The whole theory of the Arizona project was sort of a loan, and we would repay that over a period of years, and obviously we would pay it with the result of funds that are developed from the project. I agree with that. I think that is the way it should be.

Mr. DAWSON. The only thing different in concept is now we are talking about payment up-front because getting repayment over 50 years doesn't help us deal with Gramm-Rudman. It doesn't help us deal with the $200 billion annual deficit. We think we could help Indian reservations or any other non-Federal entity find financing based on that reality that you put your finger on. The benefits are there, the money is going to come in.

Mr. RUDD. We are not getting anywhere. That is what we have been doing all along. If you are going to require cost sharing in the sense of we are talking about cost sharing and you apply it to the Indian reservations, I think maybe that is a good idea and means you will bring these citizens into the family of citizenship throughout the nation, but I am wondering how you are going to get to do it. And you are telling me you are going to do it after the project is in and after it is developing funds, and, therefore, you will pay for the cost sharing portion of it.

BENEFITS BASIS FOR BORROWING

Mr. DAWSON. No, sir. I am not being very clear, which is not a new thing for me. Let me try it again.

What I am trying to say is before construction would begin, we believe that project outputs, like municipal and industrial water,

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hydropower, navigation, and even flood control, the likelihood, the certainty of those benefits that are going to flow can be used to put together a financing package with a financial institution to bring in new non-Federal dollars that will enable us to go forward with these projects.

As you say, it is nothing new. There has been a Federal——

INSTITUTIONAL PROBLEMS

Mr. RUDD. You haven't been around Indian reservations very much, I don't think, Mr. Secretary. I didn't mean to get into this, but for years I had hoped to provide funds in that way for individual citizens to build homes, to provide businesses, but you can't do that because you can't go to any bank and ask them to make a loan on anything like that, because there is no way they can attach that land if that is what you want to say, or whatever they have, because it belongs to the Indians in perpetuity, and to the council particularly, and they won't release it. There is no way to borrow funds. No bank is going to loan anybody any money on a project where they can't go back in and take the property and sell it and provide for the residue to pay for that loan. That is why it won't work on an Indian reservation.

What I would like for you to do is to think about that, and maybe provide some criteria by which you can apply what we are talking about to Indian reservations. I want to see those reservations develop, but they aren't going to be developed by talking about them and saying "We will get whatever the benefits would be for the future and borrow money on it now." There is no way you can borrow money on it. When anybody loans money, they want collateral on it to insure that money is going to be paid, and you can't find it in the way you are talking about that I can see.

Mr. DAWSON. There is one thing I neglected to say. We recognize on flood control projects, which have the least vendible output, and we do have a proposal under the Senate omnibus bill to loan the money to the sponsor, as you were describing earlier about the Central Arizona project, and have it paid back over the life of the project. But that percentage is higher, 35 percent, as opposed to 25 percent, and we still expect the five percent cash up front, which I agree there is going to be problems on.

Mr. RUDD. I don't know how you are going to do it.

Mr. DAWSON. I would like to take you up on your request and give you some better thinking on it.

Mr. RUDD. I would like to see it in writing as to how you intend to do that, and I would appreciate it very much.

[The information follows:]

INDIAN NATION AS SPONSOR

If a project truly is beneficial, the project sponsor, be it an Indian nation or any other group, can meet the proposed cost sharing and financing requirements if they are willing to work with the Corps to develop a financing package. All too often we have taken at face value various pleadings by potential sponsors that they are barred by institutional arrangements from participation in projects. We are aware that there are special issues in the case of Indian projects but we do know that economic development which produces real benefits can provide an incentive to work toward a realistic plan for project implementation.

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CRITERIA FOR PARTICIPATION

The criteria for cost sharing on an Indian reservation would be the same as those applicable to any other project. Those criteria are contained in S. 1567 as currently drafted.

TAX EXEMPT BONDS

Mr. RUDD. But I don't think you can do it in the way we are talking about it here. It just can't be done because I have been trying it for years. While you are talking about that Senate bill, let's get into some real areas here that upset me. When you started talking about, not you, but when Interior and the Corps and the administration started talking about up-front funding of all these projects, it sounds good, but we were trying to decide how that up-front funding was going to be, and my state jumped right in the middle of it, especially on the big project out there, and they said, "Look, we want to see it finished, and if your Federal funds are prohibited or restricted, we will get right into it," and we have made all kinds of offers for up-front money trying to get to it to do that.

But there is a catch here. The only way we can provide up-front funding is through tax-exempt bonds. We sell these bonds, and then we can get the money, and with that money we can pay for the up-front funding and then repay the bonds with the results, the good results, the profits that will be netted through the years you are talking about after the project is complete and help pay back the loan from the Federal Government over the 40- or 50-year period.

But that is the only way we could do that. If you take tax-exempt bonding away from us, there is no way we can do it, and this is what this does, it precludes tax-exempt financing for water projects, and somehow or other we are going to have to push for that. Otherwise there will be no up-front funding and all the projects you are talking about are going to be stopped dead.

Mr. DAWSON. Mr. Congressman, I don't believe the Senate omnibus bill does that. I believe you are referring to the tax reform legislation that would make that change. Either way, your point is still valid.

Mr. RUDD. Whatever you put in there, that is going to be a key project.

IMPLICATION OF STATUS CHANGE

Mr. DAWSON. We simply do not believe that will rule out projects. We believe there are many, many water projects that will be strong enough to proceed anyway. Thank goodness, the tax-exempt bonds are not part of my responsibility.

Mr. RUDD. You say you will be able to proceed without tax-exempt bonding?

Mr. DAWSON. Yes, sir.

Mr. RUDD. I don't know of any. Since you are in a better position than I am, maybe you do.

Mr. DAWSON. That would not be fatal. It concerns us because we obviously want to see the non-Federal entities have all the tools available to them they possibly can, because we——

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NEED FOR RETENTION OF EXEMPT STATUS

Mr. RUDD. Will you let me get some tax-exempt bonding in there, or we won't get these projects built, and you won't get what you are asking for. Can I ask for your assistance on that?

Mr. DAWSON. To be honest with you, I am not sure how much I could be of assistance, but I will certainly work with you.

Mr. RUDD. The West, because of good work you have done, otherwise would still be a vast wilderness—without the Bureau of Reclamation Act, it would be. The West is still growing and the population is shifting from the East to the West. It is a movement everybody recognizes, and so the West is still new. We have to look to the future.

We know that in my state, for example, there will be probably 100 percent growth in people alone in the next 15 or 20 years. That is a lot of growth. But in the meantime, we don't have anything to pay for this growth, and yet we have to plan for it, look to it, build for it, and that means you and people like you will be building for that growth.

In part of your testimony, you said there would be no change, everybody is going to pay equally on the cost sharing and up-front funding. But are you going to take any consideration for ability to pay? The new area here has no tax base at all, yet ten years from now, they will have a good-sized tax base. In order to prepare for that ten years from now, we are going to have to do a lot of building, constructing and all sorts of things like that.

Will you take that into consideration in the formula for cost sharing?

ABILITY TO PAY

Mr. DAWSON. That is a very, very elusive and difficult thing to define. We have not found a single——

Mr. RUDD. It isn't elusive as far as the facts are concerned, and as far as I am concerned. What I am saying is I would hope you would take this into consideration and make it part of the formula.

Mr. DAWSON. Sir, the problem hasn't arisen. We haven't found a local entity yet who has desired to repay over time and end up paying more. What we have found, though, out of the 41 new starts that you have seen fit to give us and all of the others we have tried to develop on our own, that when a water project is good, when it has a good benefit-cost ratio, the ability to pay is not an impediment because of the financial concern over the realization of those future benefits.

In flood control, we are concerned about that, and that is why we put in the provision of loaning money to the non-Federal entity on flood control projects. On other project purposes, like water supply, which is the one you mentioned, I believe, in your example, we think that is so vendible and so certain that we can help the non-Federal entity. And one of the things we are trying to do, Congressman Rudd, is bring in expertise, because we recognize a community like the one you described doesn't have an army of financial wizards to put a package like this together. We are willing to work with them to do that.

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WORKING WITH THE SPONSORS

Mr. RUDD. It is obvious to me that you have not really—I didn't realize this until we got involved in this exchange, but it is obvious to me that you really haven't thought about how this is going to take place in the sense of how we are going to get this up-front money. It is easy to say "We are going to require up-front funding," but in most of the cases, that isn't going to happen without tax-exempt bonding, and I would hope that you will think about that. I interrupted you.

Mr. DAWSON. We certainly will, sir. The only thing I wanted to say, for five years we have been wrestling with this, not inside the Ivory Tower inside the Beltway, but out with the local sponsors and putting together these local participation agreements, and so we have had to face the problems that you have mentioned.

What I would like to do is communicate better with you some of the things we are finding. I am not downgrading the real problems that you have identified. We have got to deal with them, we have got to find new and better ways to deal with them, but I think we can do it and still move ahead. If we don't have up-front financing, if we don't have cost sharing, I would submit to you that we won't be there 15 years from now when you have indicated you need us to be, and I agree the country needs us to be there to help solve some of these problems.

NEED FOR FEDERAL ASSISTANCE

Mr. RUDD. Well, you know, I don't know whether we are getting weary or not, but Abraham Lincoln is a favorite for everybody in history, Democrats, Republicans or anything else, but one of the statements he is best remembered for and hit hard for many times was government should only do for the people what they can't do for themselves, but these things we are talking about here are projects these people can't do for themselves, and that has been proven in the last 70 or 80 years.

You have done for the people what they can't do for themselves by providing economic wherewithal, and the results of it is what has made our nation grow, and we couldn't have done it without the Federal assistance that made it possible.

So what we are talking about here is you are going to get all of this up-front funding, and it is going to be a pretty sizable percent, and you have got to look to see whether or not the people can do that. People are willing to do that, but they can't do it without some help and tax-exempt bonding is the help they are going to have to have or it just cannot be done.

You say it won't be done in 15 years unless you get up-front funding, you won't get up-front funding unless you give them a way to provide it. There is no way to develop that kind of funding. I hope that you will take this into consideration, that aspect of it, and I would like to see something in writing on it.

And I would like to meet with you on it, because it is very important, and I think that we are not going to go anywhere if you don't consider how this up-front funding is going to be brought about. Also, when you talk about up-front funding on Indian reservations, you really have a problem there, and I hope you can solve that one.

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I haven't found a way to solve it in many years. Yet it has to be solved. If you will help solve it, you will bring these people into the whole family of citizenship throughout the nation and to their great welfare. So these things have to take place.

FUNDING OF DEMONSTRATION PROJECTS

Now, one last question. On demonstration projects, are you going to require up-front funding on demonstration projects?

Mr. DAWSON. Before I answer that, I want to say I certainly look forward to meeting with you and that I will do all of the things that you just asked and convey to the administration, the Treasury Department and the others, the very strong message you have indicated on tax-exempt bonds.

On the specific question, we are very concerned about the use of demonstration projects. One man's demonstration project is another man's exemption from cost sharing and special——

Mr. DAWSON. And we are very concerned if we provide a demonstration project mechanism, much if at all, that the chance of us keeping our program together in these days of the budget reduction will diminish a great deal. One way I think to use demonstration projects which can be a very useful tool, would be to apply cost sharing and yet go forward on those demonstration projects aggressively.

So my hope would be that we would minimize that approach, because I don't know how we can sell that within the budget mechanisms we have to deal with and around the rest of the country as well.

IMPORTANCE OF WATER PROJECTS

Mr. RUDD. Let me just say this. I don't think that many people understand the importance of water projects and we are talking about up-front sharing on all sorts of other projects. It is understandable that water is the most vital resource that our nation has. It is beneficial for every citizen in our country, it is not something that is gone after we do it, it will be here to stay in a continuing way to help every citizen, to help the development of this country economically.

So I really think in the way you approach things, I hope you will take the attitude that this is permanent and since it is permanent and since it is a payback not only in the way it develops the country economically, but the dollars we are going to put into these projects, this should be taken into consideration and treated a little differently, and I hope the administration will take a look at it and in that light, rather than in a hard view, we need to have this up-front funding now to help whatever the situation is.

It is not something we can back away from, and I hope that this understanding of the difference between water projects and other types of development will be taken into consideration in the way that you treat it.

And I thank you for your testimony and look forward with great interest to the answers to the questions that I have.

Mr. DAWSON. Thank you, sir.

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FLOODING IN CALIFORNIA

Mr. BEVILL. The chair recognizes Mr. Fazio.

Mr. FAZIO. Thank you, Mr. Chairman.

I would like to welcome Mr. Dawson here without the additional addition to his title of "acting". It is nice to have you here in the sense, as I am sure you are pleased to be here, Assistant Secretary. We are pleased you have broken the impasse in the other body and come to us in the manner we all knew you would eventually. It is nice to have Bory reclining in the front row. He is just luxuriating out of the limelight here.

Mr. BEVILL. He is an elder statesman now.

Mr. FAZIO. I guess so. And we welcome you, Mr. Cluff. We are also glad to see you, General Hatch.

I guess we could all beat this dead horse of cost sharing all afternoon, and I am going to try to just clarify a couple points and move on to some other things.

First of all, I was going to ask you whether or not the Corps was fully apprised of what is happening out in California today. We are having a 30 to 40-year flood in the Central Valley, particularly in the Northern Valley, and I wondered if you could tell us whether we are fully prepared to handle any of the additional cost that might occur to the Corps in the treatment of emergency circumstances or will FEMA be totally responsible for any additional costs?

Mr. DAWSON. Certainly we are very much aware of the extremely serious situation out there, Congressman. It won't be clear for some time, I am sure, the extent of the damages and capacity of the agencies to respond.

Let me ask General Heiberg and General Hatch to respond.

STATUS REPORT

General HEIBERG. We have our projects—both ours and the state projects out there are generally in good shape, ready to take the rain. Some have already done their job. But as you already alluded to, sir, the storms continue to come, and Mr. Dawson has it exactly right, we won't know until it comes on down what challenges we will have.

However, we are alerted, we have our folks out there. They are where they ought to be, where their red jackets are. We are in the business of supplying sand bags where it is needed and are prepared to work with the FEMA folks and state folks and locals where necessary. There is a lot of playing out the weather for the next couple days. We are watching that with a lot of anticipation.

General HATCH. I spoke to General Palladino this morning, and he gave me a quick rundown. Both his San Francisco District and Sacramento District have manned their emergency operation center 24 hours a day, they have people working with the state and local authorities to assess the difficulties.

Back to your question about funding. We have over $30 million as of the end of December available in our emergency fund to take care of any immediate requirements. Follow-on work, as you know, would be funded by FEMA. I can't say how they are doing for funds right now, but we will respond to FEMA's request.

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VALUE OF WATER PROJECTS

Mr. FAZIO. It is certainly a time when people appreciate what they might have forgotten, and that is the value of a lot of the water development we have already experienced, state projects and certainly flood control projects, which are the specific issue here, and, of course, we had a momentary increase in public support as a result, for all of those pork barrel projects suddenly became infrastructure overnight, and people get behind the expenditure of these dollars, and probably even to a degree, local cost sharing might be more forthcoming.

General HEIBERG. To the best of my knowledge, there is no one chained to our flood control projects out there at the moment.

Mr. FAZIO. I know there are some serious problems developing with some utility dams being threatened in the higher Sierra. The snow level is very, very high. We have got a very warm storm and a lot of snow pack is running off, in addition, just the heavy rains that we anticipate over the next several days.

So we have got schools shut down and hospitals evacuating, and a lot of highly populated areas that haven't been threatened for as long as I have lived in California, and I would hope you could come to us if there is any emergency fiscal problem we might help you with.

FUNDING HARBOR MAINTENANCE

I would like to go on to the cost sharing issues, just briefly. I was going to ask if you would be forthcoming with an additional revised budget asking for $203 million if we did not see the omnibus water bill enacted, and, therefore, no harbor maintenance trust fund was created, but apparently that won't be needed. If we don't get that bill, we won't have the money to spend and the project won't go forward. Is that a fair summation of what has been said here today?

Mr. DAWSON. That is, I think, a fair summation, although the harbor trust fund, as you know, is for O&M, and obviously we would have to deal with continuing O&M on many of the existing projects.

Mr. FAZIO. How would we do that?

Mr. DAWSON. We would have to work with you at that time, and I hope we don't cross that road, to probably come up with a combination of new budget requests, moving some money around, making some very difficult choices on how to best keep those ports operating.

Mr. FAZIO. We always have this problem with the enactment of legislation anticipated in the submission of the appropriations bill. We never know whether that bill will be finally signed into law, let alone passed by both bodies, and we are always in a position of being under-funded as a result and having to, as the taxers and spenders over here, come up with funds that were not originally included and which I think prudently ought to be included until we know what the legislative process will produce.

So I am a little concerned about how we are going to work together to come up with money in a year like this. We will scrub these numbers as hard as we have ever scrubbed them.

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Mr. DAWSON. Mr. Cluff has a good point on that question.

Mr. CLUFF. On the $203 million for the O&M. We have requested that the amount be appropriated out of general funds, and so we don't have to look for the money right now. What we are proposing is if the legislation passes, that we would then come in with a request for transfer to move that money from the inland waterway trust fund, into the O&M account. We have not underfunded the budget at all.

So if you appropriate, you will appropriate the full amount that is needed.

MOVING NAVIGATION PROJECTS

Mr. FAZIO. I appreciate that. I just want to be clear. Are you saying that without the enactment of the H.R. 6 or some other entity, perhaps Senator Abdnor's bill, that we won't go forward on signing contracts or simply on starting construction? We will sign contracts, won't we?

Mr. DAWSON. That is our hope, yes.

Mr. FAZIO. They just will not be implemented?

Mr. DAWSON. That is right. We want to go as far as we can so there is no undue delay.

Mr. FAZIO. Are all the projects going to be hung up on the enactment of this bill? There are some that can go forward on the agreements being worked on, some I guess 37 of the 41 that look like they could be completed. Some of them are going to be very much in keeping with the kind of legislation you seek. Are they all going to get hung up on the failure to enact?

Mr. DAWSON. No, just the navigation ones.

Mr. FAZIO. And they will all be hung up, even though some of them might actually reach agreement?

NEEDED LEGISLATION

Mr. DAWSON. That is true. But, again, we hope none of them are hung up because if we get the ad valorem fee and the inland user fee, we are in business.

Mr. FAZIO. You are keeping the pressure on us. Is that what you are doing? Is this leverage just to give all the incentive we possibly can?

Mr. DAWSON. We are keeping the pressure on ourselves, I guess.

Mr. FAZIO. I think we are all in this together. I just was concerned about the fact that some of these local entities might work out a perfect agreement even on a navigation project and have to sit there because they are caught up in something beyond the control of all of us, maybe just a legislative calendar, given the problems of Gramm-Rudman. We may just not get through at a time when we could trigger that funding by, was it June 30th, if we reach agreement by May 15th? What do we do under these circumstances? Isn't it tragic to have everybody dressed up and nowhere to go?

Mr. DAWSON. It would be. But I am again confident that with your help and the help and interest of the local sponsors, we can make sure that doesn't occur. That certainly is what we are working on.

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DIFFERENCES IN LEGISLATION

Mr. FAZIO. I thought I might touch on what you see as some of the major points of contention between the House bill and the bill in the Senate that apparently is your preference. One of the areas we are in some disagreement with regard to is the question of local cooperation, the concept of easements or rights-of-way or lands or dredge spoil levees, things that have in the past been counted as part of local cost sharing.

Under the House bill, those would continue to be kept for the five percent up-front requirement of cash—those would be accepted as part of the local cost sharing, and under the Abdnor bill, they would not be counted as local cost share. I know there is a very significant difference in these two bills. I am just wondering how important this would be to OMB or the White House. Is this going to be the determining factor as to whether these bills could be agreed to or eventually signed into law? Is this a vetoable issue?

Mr. DAWSON. I believe the situation is that both bills do allow the lands, easements and rights of way to be counted. It is a question of to what extent they can discharge completely the local obligation, and that is where the five percent comes in. The level of cost sharing generally is something that I think will decide whether this bill is signable or not. I wouldn't want to say an exact percentage, but I think if we don't get a level of cost sharing very close to the Senate bill, which I believe is 25 percent on flood control, and five percent of that has to be up front, the rest over the construction period, then we have got a big problem.

But I think the cost sharing in most cases between the House and Senate bill are close enough that we have an excellent chance of getting a bill. One of the main concerns we have about the House bill, and I would urge you to consider, are the new programs that get created, and we are talking about tens of billions of dollars in new programs at a time when we don't have enough money to do justice to our existing program. I think that and the huge number of projects in the House bill that have not been reviewed by anyone in the Corps or anywhere else, those are the areas of concern.

But I think all of these are resolvable—

COMMITTEE OPTIONS

Mr. FAZIO. Of course, this committee could hold back on appropriations for those until you have a chance to make recommendations to us. We know there are many in there that have been studied by the Corps as well.

Mr. DAWSON. I think that is true, although everyone doesn't have the confidence I do in the restraint of this committee. I think that another——

Mr. FAZIO. Some people think that was an understatement, but I appreciate it anyway.

Mr. DAWSON. But I do believe that is a point that will give us some leeway, but I think the exposure that will be created is a concern to some people.

Mr. FAZIO. I do want to just conclude this point by saying the local cost share can vary tremendously from the current tradition-

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al level up to, perhaps, three times that under the Abdnor bill, on average. And I really am concerned, as all my colleagues obviously are, that if we are too tight on what passes for cost sharing and attempted to accomplish too much too soon, we are going to end up, particularly with this tax bill, limiting the ability of local participants to move forward in projects that people for years have realized are qualified and cost beneficial.

USER FEE FOR PERMIT PROGRAM

I wanted to ask a question about the 404 permit process. I know you have been involved with that in great detail through the recent past, and I note your avowal to maintain funding so that the regulatory program will have no delays. I am wondering, talking about user fees, are we charging a user fee for permit applicants in that area?

Mr. DAWSON. There is a small fee that I think is $10 a permit—

Mr. FAZIO. It doesn't sound like it begins to cover the administrative costs.

Mr. DAWSON. No, sir, it doesn't. I think there may be some potential there in the ocean permit disposal area, for example. We are looking at it. There are many areas that certainly warrant some thought.

Mr. FAZIO. I know there will be opposition to that fee, as there are to others, but eventually, once we all get stuck with these opinions, we want to make sure others are stuck with them as well, and if we are trying to find ways to pay for the costs of the Corps' programs, I can't imagine a better way to go than to look in the direction of covering some of that overhead, too.

I would appreciate if you could give us a kind of formal response, perhaps, outlining for us what exactly is involved in the process of dealing with the 404 applications and giving us some understanding of how close we are coming to funding the total cost of that program. Obviously if you are maintaining your funding at $53 million for that program, you are expecting to make some improvements in efficiency in order to keep that rate of handling those at the level that you believe is appropriate.

So maybe we can find some ways to, now that we have done that kind of homework. Obviously you have done it to be able to match that figure from year to year. Perhaps you can give us the cost-benefit ratio of a permanent application.

Mr. DAWSON. I will sure look at that.

[The information follows:]

COST RECOVERY FOR REGULATORY ACTIVITIES

Our regulations require a fee of $100 for permits when the purpose of the project is commercial or industrial in nature, and a fee of $10 for permits for private, noncommercial projects. The present fee schedule evolved from a 1974 GAO report which recommended that we establish a fair and equitable fee system. We do not collect fees for permits issued to Federal, State, or local agencies, nor do we charge for letters of permission for minor activities that can be handled through abbreviated processing procedures. In addition, there are no fees charged for application withdrawals, denials, minor modifications to existing permits, time extensions, or authorizations for activities under regional or nationwide permits.

It has never been our intent that fees should recover actual expenditures. The focus of government regulatory activity is to ensure wise management of the pub-

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lic's resources. We have proceeded on the basis that such a focus should be supported by public funds. However, recognizing that some unquantifiable private benefits accrue from issuance of some permits, a modest fee is imposed on the permittee. Also of great concern in determining the appropriate fee is the possibility that those who wish to avoid the fees would risk doing their work without obtaining permits. This in turn would increase the threat to the environment and, thereby, defeat the program's basic objective of managing the Nation's waters in a reasonable and balanced fashion. Certainly we could expect our surveillance and enforcement costs to increase in such circumstances.

Our total fee collection yields less than half a million dollars a year, or less than one percent of our total program budget. In a 1981 analysis, we found that it cost an average of almost $3,000 to process a permit. The potential revenue to be realized from fees has been sharply reduced in recent years because the program has been moving away from individual permitting in favor of more efficient generic-type regulatory mechanisms, any of which rely on State and local permits. We have reduced the number of individual permits we issue by almost half since the late 1970's while at the same time expanding our use of regional permits so that they are now authorizing almost 20,000 activities a year, with fewer than 7,000 permits per year now subject to fees.

SAVINGS AND SLIPPAGE

Mr. FAZIO. One other area I am concerned about, and then I have a question specifically for General Heiberg. It relates to the slippage that the committee and the Corps dealt with in the last year. We provided some budget authority for slippage last year, around $6.9 million. It is our impression that a lot more projects of much greater worth were dumped in that category essentially by the Corps and its management this year.

Many of them, therefore, are killed, and all of them are somewhat damaged in that process, and I am wondering if you can tell us whether you expect to use this management technique in the future, because I think it does undermine the cooperative spirit the committee and the Corps have had in the past, it is possible we could end up moving in the direction of putting all our reports in bill language, thereby removing a great deal of our flexibility, both yours and ours, perhaps slipping into the hands of some of our foes, people who are not interested in proceeding in these areas, both in government and without.

I am wondering, do you think we are going to have to go that route and become much more explicit in the way in which we have worked in the past, tying down in greater detail every project that we want to see funds spent for? Or is this just a one-year aberration perhaps? Do you think we could perhaps hear from you in this regard?

Mr. DAWSON. Mr. Congressman, the apportionment decisions are probably 99 plus percent in line with the committee's report language direction. We think the report language is extremely important and provides a clear signal of what the committee would like to do. The only times where we have not complied fully with report language come where there is a direct conflict with an administration policy that we think is simply too important to reverse based only on report language.

I think it is a useful tool and one we intend to continue to follow in the overwhelming percentage of the time, and we certainly regret those isolated instances where we aren't able to do that.

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Mr. FAZIO. Do you know what the cost of the programs that slipped this year amount to? They are much higher than normal, aren't they?

Mr. Cluff, do you want to comment?

Mr. CLUFF. Yes. Not higher than normal, not higher than, say, the last four to five years. We have identified about $80 million worth of slippage that actually occurred between the time we testified and the time we received appropriations, and that is by, you know, just the lion's share of the dollars that you are worried about. It was not programmatic cuts to the program, it was actual slippage in the field in which we were advised they could not use the funds.

Mr. FAZIO. Well, I hope we can work closely together with you on this because I think it goes to the heart of the trust that has always existed between the committee and the Corps' management. And I think it is possible that we can re-instill and re-invigorate that perhaps after having a close review of this year's budget process, because I think it is important we try to maintain it. But there is no alternative for us but to be more explicit in bill language if we can't rebuild that trust.

The last questions that I had, one of which relates to recreation development, pre-1965 projects, because some of my colleagues care a lot about this, I will defer because Mr. Watkins cares even more about some in his district.

OAKLAND HARBOR PROJECT

One other question. General Heiberg, the testimony you have submitted indicates over the next five years the Corps' budget will focus on the 41 new starts and perhaps the 19 in this year's budget submission and maybe some others. I am particularly interested in the Oakland projects. The Oakland inner harbor is involved in this year, obviously.

Do you think the new start designation will transfer to the inner harbor from the outer harbor, which is one of the 19 projects in your budget? Or do we need a separate designation and separate, perhaps, authorization of that?

Mr. DAWSON. One of the things, I think, under our cost sharing proposals, Mr. Congressman, will be the capacity of any project to get to that list if they are able to finance their share during construction, as I think Oakland inner and outer would be able to do. The question you are raising about authorization is a different one, of course, and I think one the omnibus bills would have to be——

Mr. FAZIO. Would have to be enacted with the inner harbor——

Mr. DAWSON. That is my—perhaps we should get for the record a clearer reading on that. Hank, do you have it?

General HATCH. We plan to start with the outer harbor. The inner harbor, however, simply isn't quite ready yet, and we see that perhaps two or three years down the road before it would be ready to begin construction.

NEW START DESIGNATION

Mr. FAZIO. I am concerned about the new starts designation General Heiberg mentions in his testimony. If the project isn't quite

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ready but is really a continuation of the other, do we continue to make it the focus of our efforts over the next five to ten years, or does this imply that it is somewhere out between ten and 20 years?

General HATCH. The inner harbor is not competing with our attention in terms of the 41 new starts. It is not going to suffer because of the focus we placed on those.

Mr. FAZIO. We are not missing any boat, so to speak.

General HATCH. I don't think we are, sir. The inner harbor is a separable element that will become a new start candidate when the preconstruction planning and engineering is completed.

General HEIBERG. It is a good analogy.

Mr. FAZIO. Thank you. I will quote you. I appreciate all of your testimony. Thank you.

CONSISTENCY IN TREATMENT

Mr. BEVILL. The chair recognizes Mr. Watkins.

Mr. WATKINS. Thank you, Mr. Chairman, and members of the committee.

Secretary Dawson, Mr. Cluff, glad to have you. General Heiberg, General Hatch, good having you here today.

This is going to be, I guess, an interesting year. I looked over the budget, and I think the whole budget is better than what it could have been, but I still have some real questions, a lot of them you basically worked around and you answered, that is about cost sharing.

But also I want to ask about one that has got a little bit of direction on it because it may only be affecting me. I know you have been fairly consistent with the administrative policies that have been handed down to you concerning the issues of cost sharing, user fees, et cetera. These same policy directives have implications in other Federal agencies with missions similar to yours.

I would like to ask you, do you believe that every Federal agency should be required to comply consistent with the letter and intent of the administrative policy directives?

Mr. DAWSON. Certainly. That is the objective, Congressman Watkins, and I think one that OMB is endeavoring to bring about so that every agency plays by the same rules.

Mr. WATKINS. Well, do you think that they should be consistent with the administrative policy directive or that of the law?

Mr. DAWSON. Well, certainly the law must be followed, Mr. Congressman. Right after that comes the administrative policies trying to deal with these budget issues that we talked about.

GRAZING LEASES

Mr. WATKINS. What concerns me, I think we haven't been following the law as such in some of the matters, and I think we have got some serious problems. I would like to make a point that this may seem insignificant, but it is significant in our part of the country, about the grazing policy on Federal lands and the grazing policy around the Corps' projects. Around the Corps' lakes in Oklahoma your grazing rights are leased to the highest bidder in a sealed bid process. I would like to ask, is this typical of the Corps' administration of the grazing lands in other divisions?

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Mr. DAWSON. I simply don't know the answer to that, Mr. Congressman, and would ask that we get that for the record.

Mr. WATKINS. I would like to find out, because there seems to be some inconsistencies within the Corps.

General HEIBERG. If there are some areas where we have inconsistencies, I am not aware of it. Perhaps you will allow us to give you something for the record to clear that up. My understanding is we are consistent.

EXECUTIVE ORDER

Mr. WATKINS. I would like you to clear it up, but I want to clarify it with the contradiction and conflict of the policy that is being carried on by the Bureau of Reclamation, Bureau of Land Management and the Forest Service. General Hatch is coming back tomorrow, maybe he can bring that information back tomorrow.

Let me point out to you, the President just this past week signed an executive order freezing BLM and Forest Service grazing fees at $1.35 per cow per month, and this is a policy which we have checked out, the fee recovery is less than half of what it costs to administer the program. This is completely inconsistent with the user fee requirements. Yet the Corps is using another policy, and I would like to see us adhere to what the President has directed the others to do. I think that would be only consistent.

It is kind of hard, this is a difference in the same county in Oklahoma. I have got a directive by the President saying the Forest Service, Bureau of Land Management, $1.35; and here we are going about having a sealed bid, highest bidder. It is completely inconsistent. It is hard to get my constituents settled down because of such an inconsistent policy.

Mr. DAWSON. We will certainly look into that quickly, Mr. Congressman. It is a good point.

[The information follows:]

GRAZING FEE POLICIES

The Department of Interior and the Department of Agriculture are authorized to issue grazing permits and leases in sixteen contiguous Western states for a Congressionally specified fee under the Public Rangeland Improvement Act, 43 U.S.C. 1901, et seq. The Department of Interior also is authorized to issue permits to graze livestock in certain grazing districts under the Taylor Grazing Act, 33 U.S.C. 315, et seq. The Secretary of the Army is not authorized to issue permits under these acts.

Army leases lands for agricultural and grazing purposes under the authority of Title 10 U.S.C. 2667. Involved are lands that are not now needed for a government purpose but are not excess. The leases are issued at fair market value with offsets from the rental for various approved items. The dollar amount of the fair market value may vary based on locale, demand, topography, vegetation and other factors. Among the rental offsets may be conservation of land, wildlife and other resources and would include soil erosion control, conservation of natural resources, reforestation, revegetation, and wildlife food plots. This program brings money into the Treasury, provides a farm product, and may relieve the Government of certain operation and maintenance costs.

Waivers of competition at Corps projects are granted only in exceptional cases. Advertising gives all qualified persons equal opportunity to compete for use of the property, secures for the Government the benefits of competition, and prevents charges that Government employees have shown favoritism in authorizing use of public property. Bids are evaluated principally by adequacy of consideration and the responsibility of the bidder. An appraisal of the fair market value of the land use right to be granted is a guide to the minimum acceptable amount. This policy is based upon the Department of Defense implementation of OMB Circular A-25,

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which sets out some general policies for developing an equitable and uniform system of charges for certain Government services and property which convey special benefits to recipients, above and beyond those accruing to the public at large.

STATUS REPORT, FY 1985 CONSTRUCTION STARTS

Mr. WATKINS. I feel like the Corps is forcing my constituents to pay more, and I would like to see that worked out, because it may not be significant to a lot of other people, but it sure is in my part of the country, and to people that I work with day in and day out.

I would like to now move to new starts. Mr. Secretary, as you well know, under the 1985 supplemental appropriation bill, we did authorize construction of a number of projects and certain conditions had to be met. We all knew that.

I would like for you to provide for the record the status of each one of these projects for fiscal year 1985 and fiscal year 1986 funds, allocated for the construction. If you plan to construct a project, I would like for you to provide the date you expect to sign a cost sharing agreement, the date you expect to receive up-front financing, who the nonfederal sponsors or sponsor will be, and what legal authority nonfederal sponsors have to sign cost sharing agreements, the date construction will commence and the date completion is expected, the total estimated construction costs of the project, the percentage of total construction costs to be paid up front by the nonfederal sponsor and the percentage to be paid by the nonfederal sponsor over the life of the project.

I would like you to break down the nonfederal cost in percentages for each project purpose: navigation, water supply, and flood control. For those projects conditionally authorized in the fiscal year 1985 supplemental appropriations bill which you do not expect to carry forward into construction, please provide the reason for your decision and a legal justification for that decision, including statutory and judicial citations, if you don't mind. Mr. Secretary, I would deeply appreciate that.

Mr. DAWSON. We will supply that information for the record.

[The information follows:]

INFORMATION ON FY 1985 NEW CONSTRUCTION STARTS

PROJECT COST SHARING STATUS

The table following this narrative provides the information requested by Mr. Watkins for the projects we would carry forward into construction. Please note that the percentages of total, scheduled construction costs to be paid by non-Federal sponsors for projects with multiple outputs are derived from the proportional share of each project output formula. Furthermore, the milestone schedules for port projects and lock and dam projects are contingent on the passage of the Harbor Maintenance Trust Fund legislation and the increase in the fuel tax levy for the Inland Waterway Trust Fund.

LEGAL AUTHORITY OF SPONSOR

Pursuant to Sec. 221 of P.L. 91-611 (Flood Control Act of 1970), construction of any water resources project by the Secretary of the Army, acting through the Chief of Engineers, cannot commence until each non-Federal interest has entered into a written agreement with the Secretary of the Army to furnish its required cooperation for the project. A non-Federal interest (local sponsor) is defined in Sec. 221(b) as a legally constituted public body with full authority and capability to perform the terms of its agreement and to pay damages, if necessary, in the event of failure to perform.

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Each of the non-Federal sponsors for the FY 1985 Supplemental Appropriations Act projects requiring a local sponsor will be required to furnish a certification that it is a legally constituted public body with full authority and capability to perform the terms of the local cooperation agreement. How a legall_ constituted public body is defined is a function of state law.

PROJECTS NOT EXPECTED TO GO TO CONSTRUCTION

There are three projects listed in the table which are not likely to be carried forward to construction this year. The basic reason for these projects not moving forward is our inability to negotiate a local cooperation agreement by the 30 June 1986 date stipulated in P.L. 99-88, the FY 1985 Supplemental Appropriations Act. Lack of sufficient design work to establish a valid estimate, inability of local sponsors to establish a funding source within the timeframe, inability to identify a local sponsor, and inability to develop a mutually satisfactory cost sharing arrangement seems to be problems we have encountered. In addition to those proejcts which have encountered "mechanical" delays, we are not proceeding to construction of the water supply project at the Parker Lake site. The Administration's position is that single purpose water supply projects should be implemented by non-Federal interests rather than by the Federal government. The legal justification for the decision is the same as that for not proceeding with the navigation projects in the absence of increased receipts.

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Department of the Army
PL 99-88 New Start Authorizations
Non-Federal Sponsor Status
28 February 1986
($000)

State	Project	Date of Agreement	Non-Federal Funds Req'd	Scheduled Construction Award	Scheduled Construction Complete	Scheduled Total Cost $	Non-Federal Share Init %	Non-Federal Share Add'l %	Non-Federal Sponsor/ Legal Authority
AL	MOBILE HARBOR	NS	7-86	10-86	12-88	89,100	45	10	State of Alabama, State Docks Dept.
		Non-Federal Cost Breakdown/(Pct)- CN-$49,650 (55%)							
AL	WILLIAM BACON OLIVER LAD	NR	5-86	7-86	9-91	130,000	0	0	Not Required
		Non-Federal Cost Breakdown/(Pct)- IN-65,000 (50%) (Inl. Waterway Trust Fund)							
AR	EIGHT MILE CREEK	NS	10-90	1-91	9-94	12,655	53.6	0	City of Paragould, AR
		Non-Federal Cost Breakdown/(Pct)- LERR-6,109; REC-50,(50%); FC-678,(5%)							
CA	FAIRFIELD VICINITY STREAMS	5-86	6-86	9-86	9-89	21,300	54.8	0	CA State Reclamation Board
		Non-Federal Cost Breakdown/(Pct)- LERR-10,300; REC-270 (50%); FC-1,100 (5%)							
CA	MERCED COUNTY STREAMS	6-86	5-86	7-86	9-92	104,000	44.3	0	CA State Reclamation Board
		Non-Federal Cost Breakdown/(Pct)- LERR-24,950; REC-275 (50%); FC(RES)-18,300 (35%); FC(CH)-2,575 (5%)							
CA	RICHMOND HARBOR	5-86	8-86	11-86	9-88	25,800	25	10	Port of Richmond

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State	Project	Date of Agreement	Non-Federal Funds Req'd	Scheduled Construction Award	Scheduled Construction Complete	Scheduled Total Cost $	Non-Federal Share Init %	Non-Federal Share Add'l %	Non-Federal Sponsor/ Legal Authority
		Non-Federal Cost Breakdown/(Pct)- CN-6,400 (25%); CN(30 yr)-2,600 (10%)							
CA	SACRAMENTO DEEPWATER SHIP CHANNEL	6-86	9-86	10-86	9-94	98,100	46.3	0	Port of Sacramento
		Non-Federal Cost Breakdown/(Pct)- LERR-6,400; DIKES-20,650; CN-17,450 (25%)(EXCL LERR); REC-900 (50%)							
FL	DADE COUNTY, N. OF HAULOVER BEACH PARK	5-86	6-86	7-86	3-88	25,100	48.2	0	Dade County
		Non-Federal Cost Breakdown/(Pct)- LERR-100; REC-11,075 (50%); BEACH EROSION-925 (35%)							
FL	TAMPA HARBOR BRANCH CHANNELS, INCL EAST BAY CHNL MAINT.	5-86	7-86	9-86	3-91	57,498	25	10	Tampa Port Authority
		Non-Federal Cost Breakdown/(Pct)- CN-14,300(25%); CN(30yr)-5,710(10%)							
GA	SAVANNAH HARBOR WIDENING	5-86	10-86	11-86	12-87	14,650	43.8	0	Chatham County, GA
		Non-Federal Cost Breakdown/(Pct)- LERR-3,644; CN-2,771 (18.9%)							
HI	KAHOMA STREAM	6-86	7-86	8-86	2-89	24,100	30.5	0	County of Maui
		Non-Federal Cost Breakdown/(Pct)- LERR-6,100; FC-1,200 (5%)							
IA	DES MOINES RECREATIONAL RIVER AND GREENBELT	3-88	5-88	6-88	9-91	9,500	50	0	Not Identified
		Non-Federal Cost Breakdown/(Pct)- REC-4,750 (50%)							
IL, MO	L&D 26, ALTON, IL&MO 2ND LOCK, RECREATIONAL RIVER EXCL ENV MGMT	NR	11-87	3-88	4-91	280,000	50	0	Not Required

State	Project	Date of Agreement	Non-Federal Funds Req'd	Scheduled Construction Award	Scheduled Construction Complete	Scheduled Total Cost $	Non-Federal Share Init %	Non-Federal Share Add'l %	Non-Federal Sponsor/ Legal Authority
		Non-Federal Cost Breakdown/(Pct)- IN-140,000 (50%) (Inland Waterways Trust Fund)							
LA	ATCHAFALAYA BASIN FLOODWAY	NR	6-91	8-91	NS	26,230	0	TBD	State of Louisiana
		Non-Federal Cost Breakdown/(Pct)- Scheduled work is 100% Federal responsibility.							
LA	MISSISSIPPI RIVER SHIP CHANNEL	5-86	5-86	7-86		160,177	29.2	9.4	LA Dept of Commerce
		Non-Federal Cost Breakdown/(Pct)- LERR & OTH-16,712; CN-45,757 (31.7%); CN(30yr)-14,092 (10%)							
LA	PEARL RIVER, SLIDELL, ST. TAMMANY PARISH	6-86	4-88	6-88	8-93	23,656	25	0	St. Tammany Parish Gravity Drainage District No. 3
		Non-Federal Cost Breakdown/(Pct)- LERR-4,272; FC-1,642 (7%)							
MD & VA	BALTIMORE HARBORS AND CHANNELS	5-86	5-86	7-86	12-88	294,640	53.7	2.8	State of Maryland
		Non-Federal Cost Breakdown/(Pct)- LERR & OTH-55,200; CN-103,000 (42.8%); CN(30)-8,200 (3.5%)							
ME	JONESPORT HARBOR	6-86	6-86	8-86	6-88	9,830	10	0	Town of Jonesport
		Non-Federal Cost Breakdown/(Pct)- CN-1,960 (20%)							
MN	BASSETT CREEK	4-86	6-86	7-86	9-91	34,700	25.1	0	City of Minneapolis and/or Bassett Creek Watershed Commission
		Non-Federal Cost Breakdown/(Pct)- LERR-5,308; FC-3,392 (25%)							
MN, WI, IL, IA, MO	ENV MGMT, L&D26, ALTON, IL&MO, 2nd LOCK	NS	11-87	3-88	NS	196,000	TBD	TBD	Not Identified
		Non-Federal Cost Breakdown/(Pct)- TBD							

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State	Project	Date of Agreement	Non-Federal Funds Req'd	Scheduled Construction Award	Scheduled Construction Complete	Scheduled Total Cost $	Non-Federal Share Init %	Non-Federal Share Add'l %	Non-Federal Sponsor/ Legal Authority
MS	GULFPORT HARBOR	NS	1-89	3-89	6-91	49,400	25.3	9.9	Miss. State Port Authority at Gulfport
		Non-Federal Cost Breakdown/(Pct)- LERR-200,000; CN-12,300 (25%); CN(30yr)-4,920 (10%)							
NE, SD	MISSOURI NATIONAL REC RIVER	NS	1-87	2-87	NS	21,000	TBD	TBD	Not Identified
		Non-Federal Cost Breakdown/(Pct)- TBD							
NJ	BARNEGAT INLET	NS	6-86	8-86	11-90	39,900	35.4	0	State of New Jersey-Dept. of Environmental Protection
		Non-Federal Cost Breakdown/(Pct)- LERR & OTH-836; CN-3,802 (20%); REC-10,026 (50%)							
NJ	LIBERTY STATE PARK LEVEE AND SEAWALL	5-86	7-86	11-86	10-90	38,000	50	0	State of New Jersey-Dept. of Environmental Protection
		Non-Federal Cost Breakdown/(Pct)- REC-19,000 (50%)							
NY	ARDSLEY LOCAL PROTECTION	5-86	10-86	12-86	9-88	5,900	25	0	New York State-Dept. of Environmental Conservation
		Non-Federal Cost Breakdown/(Pct)- FC-1,470 (25%)							
NY	MORICHES INLET	4-86	10-86	1-87	6-88	10,000	50	0	New York State Dept. of Environmental Conservation
		Non-Federal Cost Breakdown/(Pct)- REC-5,000 (50%)							
NY	ELLICOTT CREEK	5-86	5-86	7-86	9-89	23,000	41	0	

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State	Project	Date of Agreement	Non-Federal Funds Req'd	Scheduled Construction Award	Scheduled Construction Complete	Scheduled Total Cost $	Non-Federal Share Init %	Non-Federal Share Add'l %	Non-Federal Sponsor/ Legal Authority
		Non-Federal Cost Breakdown/(Pct)- LERR-9,030; FC-470 (5%)							
NY	PORT ONTARIO HARBOR	5-86	5-86	7-86	12-87	4,830	42.8	0	New York State Dept. of Parks, Recreation, and Historic Preservation
		Non-Federal Cost Breakdown/(Pct)- REC-1,840 (50%); CN-230 (20%)							
NY, NJ	KILL VAN KULL, NEWARK BAY CHAN.	5-86	7-86	9-86	9-88	216,600	49.7	6.7	Port Authority of New York & New Jersey
		Non-Federal Cost Breakdown/(Pct)- LERR & OTH-71,300; CN-36,300 (25%); CN(30 yr)-14,500 (10%)							
OH	CLEVELAND HARBOR	4-86	8-86	9-86	9-87	4,630	35.2	3.7	Cleveland-Cuyahoga County Port Authority
		Non-Federal Cost Breakdown/(Pct)- LERR & OTH-630; CN-1,000 (25%)							
OH	GENEVA-ON-THE-LAKE	5-86	5-86	5-86	9-88	9,220	50	0	Ohio Dept of Natural Resources
		Non-Federal Cost Breakdown/(Pct)- REC-4,610 (50%)							
OK	PARKER LAKE	NA	NS	NS	NS				
		Non-Federal Cost Breakdown/(Pct)-							
OR, WA	BONNEVILLE NAVIGATION LOCK	NR	4-86	6-86	4-92	203,000	50	0	Not Required
		Non-Federal Cost Breakdown/(Pct)- IN-101,500 (50%) Inland Navigation Trust Fund							
PA	COWANESQUE LAKE MOD	5-86	5-86	7-86	9-88	13,750	79.1	12.5	Susquehanna River Basin Commission
		Non-Federal Cost Breakdown/(Pct)- REC-970 (50%); WS-1,260 (100%)							

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State	Project	Date of Agreement	Non-Federal Funds Req'd	Scheduled Construction Award	Scheduled Construction Complete	Scheduled Total Cost $	Non-Federal Share Init %	Non-Federal Share Add'l %	Non-Federal Sponsor/ Legal Authority
TX	CLEAR CREEK	5-86	7-86	8-86	9-89	118,613	34.1	0	Harris County Flood Control District, Brazoria County Drainage District #4, County of Galveston
		Non-Federal Cost Breakdown/(Pct)- LERR-33,690; FC 6,059 (5%); MITIGATION-723							
TX	COLO RIVER AND TRIBS. BOGGY CREEK AT AUSTIN	NS	2-87	5-87	3-90	26,000	39.2	0	City of Austin
		Non-Federal Cost Breakdown/(Pct)- LERR-8,576; REC-300 (50%); FC-1,242 (5%); FW-71 (33.3%); CUL. ENH-11 (39%)							
TX	FREEPORT HARBOR (1970 ACT)	5-86	6-86	7-86	9-90	103,861	32.5	8.5	Brazos River Harbor Navigation District
		Non-Federal Cost Breakdown/(Pct)- LERR-10,307; REC-460 (50%); CN-22,941 (25%); CN(30)-8,901 (10%)							
UT	LITTLE DELL LAKE	6-86	4-86	5-86	NS	45,000	44.4	0	Salt Lake County for FC & Rec Salt Lake City Municipal Water District for Water Supply
		Non-Federal Cost Breakdown/(Pct)- LERR-2,400; WA-12,000 (100%); FC-5,600 (17%)							
VA	NORFOLK HARBOR	5-86	3-87	5-87	9-88	50,500	57	10	VA Port Authority
		Non-Federal Cost Breakdown/(Pct)- LERR & OTH-3,140; CN-25,250 (50%); CN(30)-5,050 (10%); DISP-490							
VA	RICHMOND LOCAL PROTECTION	5-86	5-87	7-87	9-91	96,270	25	0	City of Richmond
		Non-Federal Cost Breakdown/(Pct)- FC-24,070 (25%)							
VA	VIRGINIA BEACH	4-86	5-86	7-86	6-88	6,130	25	0	City of Virginia Beach

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State	Project	Date of Agreement	Non-Federal Funds Req'd	Scheduled Construction Award	Scheduled Construction Complete	Scheduled Total Cost $	Non-Federal Share Init %	Non-Federal Share Add'l %	Non-Federal Sponsor/ Legal Authority
	STREAMS, CANAL NO. 2								
	Non-Federal Cost Breakdown/(Pct)- LERR-1,060; FC-470 (7.6%)								
WV, OH	GALLIPOLIS LOCKS & DAM	NR	3-88	10-88	7-95	353,000	50	0	Not Required
	Non-Federal Cost Breakdown/(Pct)- IN-176,500 (50%) (Inland Waterway Trust Fund)								

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PROJECTS WITHOUT SIGNED AGREEMENTS

Mr. WATKINS. General Hatch made a statement on which I would like to ask for some clarification. General Hatch, you said under the local cost sharing, there are 22 that you felt would be ready to be signed, and you said four would not make it. Could you tell me which ones?

General HATCH. Mississippi, Gulfport Harbor; Arkansas, Eight Mile Creek; Oklahoma, Parker Lake; Iowa, Des Moines Recreation River and Greenbelt.

CORRESPONDENCE ON PARKER LAKE

Mr. WATKINS. I see you included mine, and I guess that was a foregone conclusion from last year.

Mr. Chairman, I would like to have inserted in the record at this time a copy of my letter of November 19, 1985, to Secretary Dawson and his response, dated December 13, 1985, which both concern the Parker Lake project.

[Documents follow:]

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CONGRESS OF THE UNITED STATES
HOUSE OF REPRESENTATIVES

November 19, 1985

Mr. Robert K. Dawson
Acting Assistant Secretary (Civil Works)
Department of the Army
The Pentagon
Washington, DC 20310

Dear Bob:

When Congress authorized construction of Parker Lake in the FY 1985 Supplemental Appropriation Bill (P.L. 99-88), I was confident, given our close working relationship, that a cost-sharing agreement would be rapidly worked out so construction could begin shortly after May 15, 1986. Since that time, however, I have been hearing some ominous rumblings from the District and Division offices. But because I haven't heard anything definite from your office, I thought I should give you the courtesy of providing a direct response to some questions I have about the negotiations on this project.

First, I began hearing reports that the Corps was insisting that 100 percent of the costs attributable to water supply be provided up-front by non-Federal sources during construction. Frankly, Bob, I just can't believe that you would renege on the position you took before our Committee in February, when you testified:

> ". we recognize that there are difficulties and if we can help, particularly in the first year or two or three, so that a local entity can get its own financing house in order and have time to pursue bonding or whatever approaches they might pursue, we can do that. We also recognize the possibility that we might have to loan the community the money ourselves if they can't get a better rate somewhere else...(W)e want to...make it better known to some of our potential non-Federal sponsors that that flexibility is there."

Based on that testimony, I assumed that the Corps' original negotiating position would be the same as the agreement reached in the Senate on the Abdnor authorization bill -- non-Federal sponsors would be required to provide 100 percent of the construction costs attributable to water supply, but they could agree to repay the money to the Federal government over 30 years at the cost of money to the Treasury plus one-eighth percent. Yet it is my understanding that, in relation to the Parker project, the Tulsa District is not offering this alternative which you testified would be available.

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After that initial setback, I received another shock when I learned that Colonel Tilton informed my staff on November 8 there is "no Federal interest" in construction of Parker because it is primarily a water supply project! I'm positive Colonel Tilton must have been misinformed. because Congress has already determined there is a Federal interest in constructing Parker Lake by authorizing its construction. If it escaped your attention, let me emphasize this point -- **Congress determined there was a Federal interest in constructing Parker Lake when it authorized the project. The only remaining issue to be resolved is cost-sharing; the Federal interest has already been determined.**

Let me stress again at this point that all this discussion has come to me second-hand. I simply cannot believe the Corps of Engineers is taking these outrageous positions despite your previous statments and positions. Consequently, please let me know in writing the Corps' official answer to the following questions:

(1) Has the Administration decided there is no Federal interest in proceding with the Parker Lake project, despite authorization by Congress, because it is primarily a water supply project? If so, who made this determination -- the Chief of Engineers, yourself, the director of the Office of Management and Budget, or the President? Also, what is the magical, arbitrary ratio used to determine that a project is primarily water supply and therefore not in the Federal interest?

(2) In negotiations to determine the non-Federal share of the costs of the 41 projects authorized by P.L. 99-88, will the Corps' position be the same as the agreement reached with the Senate on the cost-sharing provisions of the Abdnor bill? Specifically, will the Corps agree to allow non-Federal sponsors to repay over 30 years those costs associated with construction of water supply at the cost of money to the Treasury, plus one-eighth percent?

Because I and other supporters of the 41 projects authorized by P.L. 99-88 may want to address these issues via upcoming legislative vehicles, please provide a prompt answer to these questions.

Sincerely,

WES WATKINS
Member of Congress

WW:tc

cc: Chairman Whitten and Chairman Bevill

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DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON, DC 20310-0103

13 [illegible] 1985

Honorable Wes Watkins
House of Representatives
Washington, D. C. 20515

Dear Mr. Watkins:

This is in response to your letter on Parker Lake and related cost-sharing requirements. The inclusion of the Parker Lake project in the Supplemental Appropriations Act, 1985 (P.L. 99-88) occurred before the Administration had completed its review of the feasibility study. Now that the project has been carefully reviewed, the Administration has concluded that there is no Federal interest in Parker Lake because it is a single-purpose municipal and industrial (M&I) water supply project. Federal construction of single-purpose M&I projects is inconsistent with the longstanding Administration policy that such projects are properly the responsibility of the non-Federal interests. Nevertheless, because of the provisions of the 1985 Supplemental, the Administration has no objection to the completion of ongoing Parker Lake planning and engineering by the Corps of Engineers, with the results turned over to local interests for their review and action.

The most recent statement of the Administration's position on single-purpose water supply projects as it relates to a specific project was contained in our August 22, 1983, transmittal to the Congress of the Corps report on the Northeastern United States Water Supply Study. In that case our letter stated, "This project would not be part of a multiple-purpose project, would not involve interstate water transfers and is a project which could be implemented by non-Federal interests. For these reasons further Federal planning efforts are not warranted." We know of no reason to exempt the Oklahoma City metropolitan region from this nationwide policy.

Although the project feasibility study claims some flood control benefits (about 8% of total benefits), these appear to be mainly incidental to the M&I water supply purpose. Flood control benefits are primarily related to agriculture and to reduced damages to roads and bridges.

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We are also concerned that if Parker Lake is constructed as a Federal project there will be further attempts to expand the Federal water supply role. For example, the omnibus water resources bill which recently passed the House of Representatives (H.R. 6) contains authority for construction of primarily Federally financed water treatment and conveyance facilities to serve municipalities and rural water systems with water from the Parker Lake project. This additional cost of about $89 million for treatment and conveyance is clearly a traditional function and responsibility of local interests.

In this era of huge deficits, broad congressional pressure for legislation like Gramm-Rudman-Hollings, and of scarce budgetary resources for water projects with unquestioned Federal interest, it is crucial that such projects as Parker Lake be financed by the local interests who are the beneficiaries of the water supply storage. In this case, the beneficiaries would primarily be residents of the Oklahoma City metropolitan area, who have the ability to pay for the project through issuance of bonds repaid by local water users and/or tax revenues.

Nationwide, we cannot afford to expand Federal financial responsibilities to include single-purpose M&I water supply projects, conveyance systems, or treatment plants. To do so could result in over $100 billion of additional Federal budgetary exposure. It could also actually slow the construction of needed facilities while municipalities stand in line for Federal funds, rather than financing these projects themselves on the bond market.

You have spoken eloquently about your concern for the need for greater economic opportunity for the people of your district, and you and I have had numerous one-on-one conversations as well as exchanges during open hearings. While I realize that you will be disappointed in our position on this matter, I hope you can appreciate the difficult budgetary and policy decisions that confront us. Had the feasibility study review process been completed before the appropriations action was taken, more informed judgments could have been made with the knowledge of all the forces at work on this issue.

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With regard to your second question, the Corps is negotiating cost-sharing agreements with local interests consistent with the provisions in S. 1567 which reflect the agreements reached with the Senate leadersihp. Sponsors have the option of paying over 30 years or less, with interest as prescribed by S. 1567. In the case of municipal water supply, we are generally seeking, as a matter of policy, to obtain the local share during the construction period rather than repayment over time. This policy is based on two important factors. First is the real need to minimize the Federal budget and spread the available funds over as many projects as possible. Second, is the fact that wherever local sponsors can issue their own tax-exempt bonds, their costs will be significantly lower than if they repay the Federal Government at the Federal role of interest, which is currently 10.89 percent. Nevertheless, whenever it is not feasible for local sponsors to issue bonds, we will offer the long-term repayment, as S. 1567 provides.

Sincerely,

Robert K. Dawson
Assistant Secretary of the Army
(Civil Works)

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IMPLEMENTATION OF PARKER LAKE

Mr. WATKINS. We thought that we had some flexibility, and Mr. Secretary, I truly felt—in my letter last year—I would like to ask, General Hatch—you indicated the federal money for Fiscal Year 1987 had been included in 40 of the 41 projects included in the Fiscal Year 1985—which one of the projects have not been allocated?

General HATCH. Parker Lake.

CONCERN FOR PARKER LAKE

Mr. WATKINS. There has been a foregone conclusion here from the very beginning my project was going to be completely dealt with differently, separately in every way.

It bothers me because, I don't know, Mr. Secretary, I thought I was shooting straight with you.

But it doesn't seem like—maybe I was hearing a lot of rhetoric while your confirmation was pending before the Senate. I would like to think it wasn't that, but I expressed my per capita income in this area as being less than $5,000, and that we had double digit unemployment, and you indicated to me, or I had every impression to believe, there would be some flexibility in trying to deal with that, like the Laxalt letter the President sent concerning the Bureau of Reclamation. They had proposed to try to deal with projects in a different manner and have some flexibility.

Now I have a conclusion just marking Parker off.

Mr. DAWSON. Congresman Watkins, let me assure you that there is no attempt to single out Parker Lake. When I testified a year ago and talked about flexibility, and I certainly didn't have any ulterior motive to say what I said, except to reciprocate. You have been forthright on this, and we have tried our best to be equally as forthright.

The problem we encountered on Parker Lake was that it is in the judgment of the Army, a single purpose water supply project.

WATER SUPPLY PROJECT

Mr. WATKINS. Let's address that right now.

Mr. DAWSON. Yes, sir.

Mr. WATKINS. We talked about it. You said you would be flexible. Why did you lead me to believe you would be flexible?

Mr. DAWSON. At that time I didn't know. I don't think the Corps study was completed to be able to say it was a—

Mr. WATKINS. There is another purpose in it, but you arbitrarily said it is a single purpose. What percentage of flood control in a lake does it have to be before you can say it is a dual purpose or multipurpose?

Mr. DAWSON. I can say this, over 90 percent of the benefits from this project, Parker Lake, are municipal and industrial water supply. If we were to do this kind of project, we would be looking at billions of dollars in potential Federal expenditures for what amounts to an incidental or secondary output.

That's a rough, conservative estimate but it reflects our concern for this kind of project. This is not new to this administration, but

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such a project has historically been the responsibility of state and local units of government. Certainly there is no intent to single the project out. In fact, I think the Corps went to some length to look at other potential project purposes.

POLICY FOR SINGLE PURPOSE PROJECT

Mr. WATKINS. Let me make a point to the committee here, that arbitrarily there has been a decision made if you got 8 percent and use it in another purpose that's not a legitimate percent, and even though it is a dual purpose the Secretary's office made a decision this is a single purpose project and they have no federal interest.

That is what the letter says, no federal interest.

Now, the Congress says there is a federal interest. We said it needed to be built. Yet, you have ignored it. I mean, that is by law, Mr. Secretary, that is by law.

Yet, you are following administrative policy instead of law. And it is hard for me to accept, especially when I thought I was working with the good character and good intent to see I carried out what our part would be and find out the office down there has arbitrarily reached out and made a decision.

Let me ask you this question then, Mr. Secretary. If you said this is a single purpose, are you recommending to the committee here that the Bureau of Reclamation be allowed to build this? Are you recommending that it be authorized the Bureau of Reclamation build it?

Mr. DAWSON. No, sir. The Bureau of Reclamation is under the same policy, and has been historically, of not building single purpose——

Mr. WATKINS. They build single purpose.

Mr. DAWSON [continuing]. Municipal and industrial water supply projects? Now, they certainly do agricultural water supply.

Mr. WATKINS. They build for municipal and industrial water.

Mr. DAWSON. I don't believe single purpose, Mr. Congrssman.

Mr. WATKINS. They build primarily single purpose projects. They are buiding McGee Creek. It is basically a single purpose project providing municipal and industrial water supply.

BASIS FOR FEDERAL INVOLVEMENT

Mr. Chairman, I am trying to find out where—am I being discriminated against.

Mr. DAWSON. No, sir. And I believe any objective review of the decisions we have made on water projects would belie any hint of discrimination against anyone on any basis.

Mr. WATKINS. I am the only one singled out. I am singled out in what General Hatch said, Parker Reservoir is one of the four not being considered. A letter came to me stating; "no federal interest, single purpose." I am trying to find out why the Corps doesn't build one that has 8 percent flood control benefits.

You know, I am left here without any agency that wants to do anything to assist my people. Not a thing, Mr. Secretary, and my area is a lot worse economically off than what Congressman Rudd was talking about a while ago concerning his area, and it is a policy based on wealth.

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If you have the wealth, you can do it. And that doesn't surprise me about this administration.

Mr. DAWSON. Sir, I would strongly disagree with that characterization of the policy. We believe that the projects this committee considers produces benefit for any community, wealthy or poor. We believe that about water supply projects.

FINANCIAL CAPABILITY

Mr. WATKINS. How can they get up-front financing, Mr. Secretary? How can a poor, economically deprived area get up-front financing?

The Corps doesn't want us, you are saying basically. The Bureau of Reclamation doesn't want us. Now you are throwing us out and saying, you go out and find some private financing to try to do your job down in that poor, sparcely populated rural area of the country that doesn't have the financing mechanisms and legal entities to do it, because they are covering multi-counties.

Mr. DAWSON. Mr. Congressman, we believe—and our experience over the last five years trying to put these agreements together supports the belief—that if there is a need for this water, as you obviously believe there is, and there are customers out there prepared to pay for this water, and they will eventually do that anyway, that those benefits can be translated into financing.

It doesn't matter how wealthy the community is. It is whether or not those benefits are real.

Now, if there is already more water in the area than is needed, and I am not suggesting that is necessarily the case there, if the water really isn't needed, no, it is not going to be financable.

But if the water supply is needed, as you have been very articulate in saying that it is, I would submit to you that it can be financed.

Mr. WATKINS. Let me ask you, do you expect a little community that has got a little water to shut everything off completely immediately and start trying to work within the mechanism? They are going to have to blend this in. It is going to make it very nearly impossible to get private financing and see that it is paid back, especially up-front financing.

It is nearly an impossible dream. Even a 30- or 40-year pay-back period makes it very difficult, but let them work it out over a period of time.

But up front financing just puts a burden on these people and they can't carry that kind of cross.

WORKING TOGETHER

Mr. DAWSON. We would like to work with you, Mr. Congressman, to show that our interpretation is right, that if there is a need for the water supply that private financing can be developed.

The other side of the coin, I think, is that if we do this nationwide, we are looking at tens of billions of dollars in obligation.

We don't see that coming. We want to try to work with you to try to do these projects that are good solid projects and are needed, not in a new federal environment, but in the way the nation has

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traditionally done local water supply, without the federal government shouldering——

Mr. WATKINS. Mr. Secretary, I would like to put a lot of faith and trust in you, but I see my area has been singled out, the ones that are weakest financially, hardest to put the financial package together, have been singled out and you said we are not even going to look at any follow-on money for you.

So, you have written us off, and I just don't see where there is any concern, but I think that also has been the attitude of this administration about helping these kinds of people we are talking about.

COMPLETION OF RECREATION FACILITIES

I would like to move on, because my good friend from Tennessee has some questions, and I would like to move on to completion of some planned recreation facilities. You have refused to comply with the implied wish of Congress on the basis of intent we have had on full funding of Sardis Lake and Copan.

Is that what you plan to continue to do, is ignore the law reqarding these projects?

Mr. DAWSON. Certainly in those cases where it is clearly stated in the law and there have been such, we intend to carry it out. I would urge the committee, this is certainly an area I was trying to allude to before, where it is my judgement if we continue to try to do these things at a hundred percent federal, at a time when we don't have enough money to do the higher priority things that I think this committee has recognized as higher priority—flood control, navigation, M&I water, hydropower—we don't have enough money to do those things—that we would move toward cost sharing, which the Congress itself has recognized in the past is a good idea on recreational projects.

Mr. WATKINS. Would you explain for the record, whether or not you are complying with the legislative directive to complete the recreational facilities at the five lakes addressed in the FY 85 supplemental?

I would like to know whether you plan to do that as we directed you in the legislative language.

Mr. DAWSON. We will provide an answer for the record.

[The information follows:]

DIRECTIVE TO COMPLETE FACILITIES

The Corps is complying with the legislative directive in the FY 1985 Supplemental Appropriations Act to construct recreation facilities at these five lakes at full Federal expense. Funds will be allotted for this purpose consistent with the allocations set forth in the conference committee report accompanying the 1986 Energy and Water Development Appropriation Act. In addition, we will make transfers to these five projects in FY 1986 to construct additional recreation facilities at full Federal expense up to the allocations included for each one for this purpose in the conference committee report accompanying the 1985 Energy and Water Development Appropriation Act. We have not, however, budgeted further recreation facilities at these projects at full Federal expense in FY 1987.

FUNDING IN FY 1986

Mr. WATKINS. How much money has been allocated for this purpose in FY 1986 at each of these five projects?

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Mr. DAWSON. Funds in the amount of $2,500,000 have been allotted to the Saylorville Lake project and $4,500,000 have been allotted to the New Melones Lake project. The latter amount consists of the $3,000,000 allocation shown in the FY 1986 conference committee report and a transfer of $1,500,000 from available funds. Funds will be allotted to the other two projects for which they were provided in the FY 1986 conference committee report after the scope of facilities to be constructed has been defined, reviewed and approved. Also, we will make transfers to these projects to construct additional recreation facilities up to the allocation included for each one for this purpose in the FY 1985 conference committee report.

DEVELOPMENT OF RECREATION FACILITIES

Mr. WATKINS. When did, or will, construction commence, and what is the estimated completion date at each project?

Mr. DAWSON. The presently estimated commencement and completion dates of construction of additional recreation facilities at full Federal expense are shown below.

[The information follows:]

Project	Commence construction	Complete construction
Ouachita and Black Rivers, AR & LA	July 1986	June 1988.
New Melones Lake, CA	April 1986	December 1987.
Saylorville Lake, IA	July 1986	December 1987.
Copan Lake, OK	July 1986	December 1988.
Sardis Lake, OK	July 1986	December 1988.

PLANNING AND ENGINEERING FOR PARKER LAKE

Mr. WATKINS. Let me ask you one other question. You indicated in a December 13, 1985 letter to me, on Parker Lake, concerning the CP&E, and I quote, "Because of the provisions of the 1985 supplemental, the adminstration has no objection to the completion of the ongoing Parker Lake planning and engineering by the Corps of Engineers with the results turned over the local interest for their review and action."

Basically, you have given us that little crumb there, saying we are not going to do anything else, we are going to let you review the plans. Does that include turning them over to the Bureau of Reclamation and letting them do the project?

Mr. DAWSON. Again, Mr. Congressman, I don't believe the administration intended for any agency to undertake a new project that is single purpose, in our judgement, on water supply.

Mr. WATKINS. I would like to point out again, Mr. Chairman, you say you don't believe they are going to do it. We have authorized 41 projects. There are 22 on which cost sharing agreements would be signed. Four will not be.

Mine has been singled out as being the one where there is no follow on money.

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LEGAL BASIS FOR DECISION

Mr. BEVILL. If the gentleman would yield, Mr. Secretary, this subcommittee is certainly interested in this Parker Lake project, and we want to go into this.

Now, we know the old law has been that where it is construed as being just water supply, the state has a primary responsibility, but in the supplemental, we specifically set that out as to what would be done on Parker Lake.

So, I think in order to clear this up, because I know the committee is going to want to go into this, I would like to ask you to submit to us a brief, have your counsel submit a brief, what legal ground does he have to not move on this project.

It is the clear intent of Congress that each of these projects go forward. So, we would like to know the basis for your inaction.

Mr. WATKINS. Thank you, Mr. Chairman.

Mr. DAWSON. We will supply that for the record.

[The Information follows:]

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DEPARTMENT OF THE ARMY
OFFICE OF THE GENERAL COUNSEL
WASHINGTON, D.C. 20310

REPLY TO ATTENTION OF

13 March 1986

MEMORANDUM FOR THE ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS)

SUBJECT: Legal Requirements of Supplemental Appropriations Act of 1985, P. L. 99-88

You have asked for a legal opinion addressing two questions asked of you during your testimony before Congress on February 18 and 20, 1986. On February 18, Chairman Bevill of the Subcommittee on Energy and Water Development, Committee on Appropriations, House of Representatives, asked you to submit an opinion explaining the legal basis for your decision not to spend appropriated monies on the Parker Lake project. On February 20, at the Senate Hearing on the Fiscal Year 1987 Civil Works budget, Senator Hatfield asked you to provide the legal basis for the decision not to start construction of inland waterway projects authorized by P.L. 99-88 until user fee legislation was enacted.

P.L. 99-88 authorizes the Secretary of the Army to construct 41 water resource development projects. The Act also appropriates an additional lump-sum of $48 million to the "Construction, General" appropriations account, and an additional lump-sum of $800,000 to the "Flood Control, Mississippi River and Tributaries" account. P.L. 99-88 makes no specific appropriation of funds to be used on any specific projects.

It is my understanding that the Army intends to spend all of the money appropriated in P.L. 99-88. Unfortunately, complete construction of all 41 projects would cost the federal government more than $2.4 billion. Having been appropriated only $48 million the Army must make difficult decisions to determine to what extent projects will go forward and when. Congress recognized this and, as discussed below, by using a

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lump-sum rather than a line item appropriation, granted the Army the discretion to make these difficult decisions.

Given limited funds, you have decided not to begin construction of the thirteen deep draft projects, having a federal cost over $1 billion and the four inland waterway projects, requiring expenditure from the general fund of almost $500 million, until Congress has enacted legislation that would enhance federal revenues by establishing a port use ad valorem fee and increasing the inland waterways fuel tax. These were important elements of the agreement between the administration and the Senate majority leadership concerning cost-sharing for future projects. Similarly, you have decided that use of the limited funds for projects with essentially the single purpose of municipal water supply, such as Parker Lake, is not appropriate. In my opinion, this is entirely within the Army's discretion.

The Comptroller General has held that lump-sum appropriations may be expended on any authorized activity within the scope of that appropriation. In the matter of LTV Aerospace Corp., 55 Comp. Gen. 308 (1975). In that case the Comptroller General noted that "Congress has recognized that in most instances it is desirable to maintain executive flexibility to shift around funds within a particular lump-sum appropriation account so that agencies can make necessary adjustments for 'unforeseen developments, changing requirements, ... and legislation enacted subsequent to appropriations'" Id. at 318 quoting Fisher, Reprogramming of Funds by the Defense Department, 36 The Journal of Politics 77, 78 (1974). The Comptroller General went on to hold that:

> [I]t is our view that when Congress merely appropriates lump-sum amounts without statutorily restricting what can be done with those funds, a clear inference arises that it does not intend to impose legally binding restrictions, and indicia in committee reports and other legislative history as to how the funds should or are expected to be spent do not establish any legal requirements on Federal agencies.

Id. at 319.

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Accordingly, since P.L. 99-88 contains no restrictions on the use of funds appropriated to the Construction, General appropriations account or to the Flood Control, Mississippi River and Tributaries appropriations account, the Secretary of the Army has the responsibility to expend the funds in a manner that recognizes the limited amount available. To carry out this responsibility, he has the authority to determine when and under what circumstances to expend the funds provided by the Act to undertake any of the projects specified in the Act.

Susan J. Crawford
General Counsel

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Mr. WATKINS. I only have two more questions.

STATUS OF PLANNING FOR PARKER LAKE

Has all the CP&E work been done on Parker Lake?

Mr. DAWSON. I don't believe so. I believe it is still underway, the early stages of that.

Mr. WATKINS. When do you expect it——

Mr. DAWSON. We can get a date.

General HATCH. I don't have a date.

Mr. WATKINS. Will it be completed with the appropriated funds that we have had?

Mr. DAWSON. No, sir.

Mr. WATKINS. We will have to have a little more.

Mr. DAWSON. We can get you the details on it.

Mr. WATKINS. Also a little more. It seems like we can never get anything completed.

Mr. DAWSON. Sufficient planning and engineering work should be completed with funds received to date to permit the local sponsor to effectively use the information transferred to them for the final design of major features of the project. This will facilitate transition from the Corps of Engineers effort to non-Federal assumption of project implementation.

STATUS OF FEASIBILITY STUDIES

Mr. WATKINS. Congress provided that feasibility studies on the Red River, and also the Central and Southeast areas of the Oklahoma study be fully federally funded.

Are you directing they proceed as fully federally funded studies without the cost sharing?

Mr. DAWSON. These feasibility studies are already underway, Mr. Congressman?

Mr. WATKINS. Yes.

Mr. DAWSON. I believe your interpretation is correct, but I would like to confirm that.

That is right.

Mr. WATKINS. So I won't have to go back and give my folks heartburn on that.

General HATCH. We were directed to start that by March of 1985.

Mr. DAWSON. It is underway. We wouldn't attempt to apply cost sharing.

Mr. WATKINS. I appreciate that very much, and I appreciate the committee's patience in allowing me to get into these issues.

I am probably as frustrated today as any time I have ever been in Congress in trying to do something positive and move something forward to try to help that economically deprived area of the third congressional district of Oklahoma that motivated me to come to Congress.

It seems like every turn I take I am getting bottled up with trying to accomplish some of the things that are essential and needed there. I am going to turn in some questions, and I appreciate your efforts in answering them.

I don't want to be singled out.

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I can't get anything significant, Mr. Secretary, and I am frustrated.

Thank you, Mr. Chairman.

Mr. WATKINS. What is the status of these studies?

Mr. DAWSON. I will provide that information for the record.

[The information follows:]

Reconnaissance studies for the Arkansas River and Tributaries, South Central and Southeast Areas of Oklahoma Comprehensive Study were completed in March 1985, as originally scheduled. Feasibility studies were initiated with $100,000 provided in April 1985. Reconnaissance studies for the Red River Basin Comprehensive Study were completed in March 1985, as originally scheduled. Feasibility studies were initiated with $235,000 provided in April 1985.

The Arkansas River and Tributaries, South Central and Southeast Areas of Oklahoma Comprehensive Study is scheduled to complete in December 1988 and the Red River Basin Comprehensive Study is scheduled to be completed in March 1989.

EFFECTS OF GRAMM-RUDMAN

Mr. BEVILL. The Chair recognizes the distinguished gentleman from Tennessee, Mr. Boner.

Mr. BONER. Thank you, Mr. Chairman.

Mr. Secretary—better yet, I know you as Bob—we are glad you are officially serving in that capacity, and I extend my welcome to you and to the other members of your staff.

I will try to make my questions as brief as possible, and recognizing that when you are the junior member when you get to the end, sometimes most of the questions have been asked.

I want to ask a few questions about the budget, in particular about the Fifth District of Tennessee, which I represent.

As it relates to the budget, in particular, you talk about the effects of Gramm-Rudman, and I believe in your statement that most of the impact of Gramm-Rudman would be made up by user fees and other receipts.

If that is the case, then aren't we really missing the impact of Gramm-Rudman? If Gramm-Rudman is to have a 4 percent effect of reducing federal spending, then by letting that 4 percent be absorbed in increases in user fees, isn't that still—do you not feel that has the effect of cutting the 4 percent of the federal expenditures themselves?

Mr. DAWSON. No, sir. The way we would envision this working is that the non-Federal contributions and user fee receipts would never enter the Federal Treasury.

We are talking about the non-federal entity coming up with a percentage of the share and combining that with the federal share to produce the project. The federal share will be declining as a percent of the money that we have to work with. We think the Federal share will be declining over the next few years because of Gramm-Rudman, but we are optimistic that as the non-federal share increases we will be able to have a good program in spite of that.

AD VALOREM RECEIPTS

Mr. BONER. Now, going back to the revenue side of your receipt side, I think you say there is—what, $203 million will be brought in on increases in revenue?

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Mr. DAWSON. I believe that is the receipts from the ad valorem fee.

Mr. BONER. Is that an estimate? Is that a hard figure or something that could change just like we try to estimate what the gross national product and rate of inflation is going to be?

Mr. DAWSON. It is an estimate, but I think it is one that has been subjected to a lot of input and scrutiny, not just inside government, by Customs, Treasury, Army, but also by the port industry itself.

WATERWAY FUEL TAX

Mr. BONER. Along that line, you also are, I think, proposing an increase in the fuel tax.

Now, will this be the fuel tax that will be paid just by commercial users, or will this be a fuel tax that will be paid by anyone who buys gasoline to use in a boat?

Mr. CLUFF. Just commercial users of barges and only in the inland waterway system. When they are outside the designated inland waterway system, they will not pay the tax on the fuel used at that point.

In some cases, we have ports in which the barges move quite a distance outside the inland waterway system. The funds are reserved solely for construction of inland waterway projects.

Mr. BONER. I understand it has just been raised to its limit last year of ten cents. What is your proposed increase, and what is the rate structure, and how do you gradually accelerate that?

Mr. DAWSON. It will be doubled over a ten-year period, and there is a variety of proposals on front loading or back loading that increase.

I think the important thing is that we produce those revenues, but there is an option that will impact in the least adverse way on the barge industry.

I might say that the barge industry is participating in discussions along that line.

RATE OF TAX INCREASE

Mr. BONER. Have you formulated a scale, for instance, one cent a year, or have you put into place what you think that scale or that formula will be whereby the tax rate would increase?

Mr. DAWSON. The Senate bill, I believe——

Mr. CLUFF. The Senate bill has a cent a year, but I believe the Administration, when they reached agreement with the Senate, indicated any schedule the Congress was willing to come up with to double the tax within the next ten years the Administration would be satisfied with.

PERCENTAGE FOR COST SHARING

Mr. BONER. Concerning percentage of participation by the sponsors, we have had several projects in Nashville that our local government has participated in, is there a formula?

I know you are also trying to increase the percentage, whether it be 50 to 60 or 60 to 70, but is there a formula you are using now

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you are trying to get most of your sponsors to go along with? If so, what is it?

Mr. DAWSON. Yes, sir. It is a very fixed formula, but varies with the project purpose. But if you have ten projects with the same project purpose, there is no variation, and that consistency, I think, is one of the important things that we need to adhere to.

We can provide you the exact percentage for each project purpose. We are using the percentages that are in S. 1567, the Senate version of the Omnibus bill.

Mr. BONER. What is that?

Mr. DAWSON. For local flood control project, 25 percent, non-federal, with 5 percent cash up front.

Ports vary depending on the depth. The deeper you go the higher the percentage of non-federal contribution for construction.

Hydropower and municipal and industrial water, because they are fully vendible, are 100 percent non-federal—just as they are under existing law.

Agricultural water supply, I believe, is 35 percent. Those are the main ones.

REDUCTION OF BUDGET REQUEST

Mr. BONER. If you are required to make additional cuts in the budget, how will you go about making those cuts?

Mr. DAWSON. You mean, say, under a Gramm-Rudman or——

Mr. BONER. If this committee is not able to fund at the level that you proposed in your budget, how will you adjust it to make the necessary cuts?

Mr. DAWSON. I think we would have to work with you, then, and we certainly wouldn't try to do that in a vacuum.

Mr. BONER. Will it be an across-the-board type system or will you do it on a project-by-project basis as to how much you can cut?

Mr. DAWSON. I believe the Congress and perhaps the committee, I believe the committee, too, has expressed strong preference for across-the-board.

I am certain that is one approach to the problem. Before you would deviate from that, we would expect, certainly, to work with you to seek approval on that. But I really don't know.

I think there are so many unknowns on how we are going to cope with these things that it is hard to nail it down much more specifically.

OFFSETTING RECEIPTS

Mr. BONER. I think your total figure—I saw where you were estimating revenues to come in—was about, I think there was a figure of $19 million and $203 million. The $203 is dependent upon legislation to be passed.

If the legislation isn't passed, what will you do to make up that?

Mr. DAWSON. The $19 million is what is coming in under existing law. Well, that, I think—any number of possibilities would exist.

Mr. Cluff might have——

Mr. CLUFF. We have proposed that the $203 million be appropriated out of the general revenues and that when the legislation does pass, we will then request a transfer.

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But until that time, the $203 million is to be appropriated out of general revenues, so there is no loss in program efficiency and there is no shortage of funds to deliver the program we think is needed.

Mr. BONER. In the event that legislation won't pass, then we would be increasing the budget by some $203 million?

Mr. CLUFF. No, we requested the $203 and have stated in the event the legislation passes we will request a transfer for that $203.

In other words, funded out of the new account instead of the general fund.

Mr. DAWSON. So, what happens without the legislation and receipts is that the national deficit would simply go up by that amount.

MINORITY CONTRACTING

Mr. BONER. What about your policy on your minority contracting? What is the percentage that you try to go to?

Mr. DAWSON. Could we provide that for the record, Mr. Congressman? The way that works is we are given a figure—the Defense Department gets a figure and the Army gets a figure and the Corps of Engineers gets a figure after that.

Our record has been good on meeting that. But we will get you the details, if we can.

Mr. BONER. I would like to know what your percentage is that you strive to achieve, and in the last year did you achieve that? If you did, did you exceed it? If you did not achieve it, what is your percentage?

Mr. DAWSON. I believe we did achieve it, but we will give you the details on that.

[The information follows:]

The goals for Minority Contracting in the Department of Defense are given as a dollar figure. The FY 1985 goal for Minority Contracting for the Corps of Engineers was $33,500,000. The Corps of Engineers exceeded its assigned goal with awards to minorities of $448,653,000. This achievement amounted to 9.3% of awards to U.S. industry.

LOCAL STUDIES

Mr. BONER. Let me talk about the Fifth District of Tennessee, which is near and dear to my heart.

First of all, I want to compliment Colonel Kirkpatrick, who is your individual down there who does a very capable job, and I have worked very closely with him as we have attempted to evaluate a project known as the Mill Creek project, which I am sure, General Hatch, when you had your tenure there you also were familiar with.

At the present time, it is my understanding that we are in the process of a public hearing stage where the public can make recommendations and submit information to be sent back to Cincinatti for final approval.

Is there someone here who could talk to me about the specific status of that particular project?

Mr. DAWSON. We can arrange for someone——

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General HATCH. The Ohio River division commander will be appearing before this committee within the next few days presenting his program, and we will be sure he provides that information during his testimony.

Mr. DAWSON. If that is not soon enough, let us know and we will have him come on in.

Mr. BONER. In your budget, you have, once again for Tennessee, and in particular the metropolitan region of Nashville, $300,000 in surveys.

Is there someone here now, or once again, should I wait until he comes to give me a better breakdown?

General HATCH. I suggest we wait until he comes.

Mr. DAWSON. If you can wait, that will be preferred.

WASHINGTON POST ARTICLE

Mr. BONER. The last question has to do with, perhaps, an article that was written in the Washington Post relative to bid rigging problems and Federal Government claims for damages due to bid rigging on projects.

Is this a widespread problem, and if so, what are we doing to try to resolve it?

Mr. DAWSON. Mr. Congressman, this is one where I would respectfully ask we give you a full response for the record. There is litigation underway now. I think we need to be very careful about what we say. I will say that any one incident is more than we would ever want to see, and we would certainly intend to, if we did find that there has been bid rigging, take whatever steps we can administratively to diminish the chance that that kind of thing could ever reoccur.

So, we do take it very seriously and would expect to take every appropriate action to deal with it. I think as the legal proceedings unfold we will be in a better position to tell you what we specifically intend to do.

I will provide you, though, a complete answer for the record.

[The information follows:]

INVESTIGATIONS OF BID RIGGING FOR DREDGING CONTRACTS

Three investigations are currently being conducted by the Department of Justice into the alleged practice of bid rigging by contractors for Corps of Engineers dredging projects. The investigations cover Corps dredging projects in the North Atlantic, South Atlantic, and Gulf Coastal areas. To date only the South Atlantic investigation has produced sufficient evidence to prosecute companies and individuals for illegal bid rigging practices. Under provisions of the Sherman Antitrust Act, two companies and one individual have been convicted thus far. Until the investigations have progressed further, it would be difficult to speculate on how many additional indictments will be handed down. The Antitrust Division of the Justice Department has suggested methods for detecting bid rigging and the Department of Defense Inspector General has prepared a helpful booklet entitled "Indications of Fraud in Department of Defense Procurement". As could be expected, contracting officers have become particularly sensitive to this problem and they will do everything possible to detect indicators of bid rigging and report any suspicious bids for appropriate prosecution.

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OPERATIONS AND MAINTENANCE INCREASES

Mr. BONER. As I look over your percentage of increase, other than the construction, your O&M General is your second highest increase. What do you attribute that to?

General HEIBERG. There are a couple of factors working, and I will ask General Hatch to help me with this.

One, of course, every year our projects get a year older, and repair and rehabilitation becomes more difficult because they are getting older. That is just a fact of life.

Second, we continue to bring, even though we haven't had authorizations, as we pointed out here—for a while, we have been continuing to bring new projects on line. And as we bring new projects into the Corps family of projects and start to operate them, there is a need to increase O&M, General Account.

I don't think we need to apologize for either of those. Those are both facts of life and those are the two main reasons that O&M, General has been going up.

Perhaps General Hatch wants to enlarge.

General HATCH. When we bring in new projects, we are not decommissioning older projects. Also some of that increase is simply cost escalation from one year to the next.

TOTAL PROGRAM FUNDING

Mr. BONER. Our figures show that in Fiscal Year 1986 enactment was approximately $2.7 billion, and you are requesting this year a little over $3 billion, which is an increase of 14 percent.

How are we having the increase of 14 percent in this area as in others when we are told that we are going to ask the agencies to come in and reduce the amount of money they were getting—what are you doing to show that you are adhering to Gramm-Rudman by coming in with an additional 14 percent increase in your budget?

Mr. DAWSON. Well, I think that what you put your finger on, Mr. Congressman, and maybe my colleagues will be more specific in a minute, but it shows the administration's recognition, the President's recognition of the potential for water projects.

We are not really requesting an increase in our budget. Some of that increase is attributable to the follow-on federal share of those 41 new starts which where not funded in FY 1986 and the other new starts for which we are budgeting. But we believe that in the long run this is in the spirit of Gramm-Rudman, because at the same time we are getting the non-federal shares increased, the federal overall amount of money will, no doubt, be declining.

So, this year's slight increase shows the willingness of the administration to go along, at least for the time being. And it is another reason why we need to get the bill and get moving on some of these projects, to go forward on a lot of the new construction starts.

General HEIBERG. I would like to add to what the Secretary said, sir. We are taking our share of the 4.3 percent reduction allocated to us of the Fiscal Year 1986 Gramm-Rudman bill. That is $122 million.

As I reported in my opening comments, although that will be internally somewhat painful, we believe we can live with that in the

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spirit of doing our part to meet the requirements of the bill and make sure the important projects continue to go forward.

Mr. BONER. Thank you. And I look forward to continuing to work with you.

Mr. BEVILL. Any other questions?

Mr. MYERS. I apologize for being gone for a while and trying to wear two hats.

SUPPLEMENTAL APPROPRIATIONS

As I look through your budget request here, there is nothing in this budget that is requesting funds contingent upon further acts by Congress in cost sharing. If Congress fails to enact cost sharing, there will not be a requirement to come back for a supplemental appropriation.

This committee is frequently criticized because of the supplemental appropriations, that we have not properly anticipated needs in advance and didn't appropriate enough the first time.

There is nothing in here that would necessitate a supplemental because Congress hadn't enacted further legislation.

Mr. DAWSON. I believe we treated that in a more responsible way this time, Mr. Myers. As Mr. Cluff pointed out earlier, it won't—if we don't get the ad valorem fees, for example require you to have to up the ante for that.

We have already asked for those funds in the event we don't get the ad valorem fees. Is that right?

Mr. CLUFF. That is correct.

Mr. DAWSON. So, we wouldn't envision needing to come back for more, at least on those user fee accounts.

Mr. MYERS. In your estimates for 1987, you are requesting $1,072,570,000 for construction. If Congress fails to enact legislation, you wouldn't need a billion; you would be turning back money. The country would lose, but you wouldn't be spending as much.

SEQUESTRATION OF FUNDS

Mr. DAWSON. That is right.

Mr. MYERS. I notice $1,075,000 is sequestered from emergency funds. What good does it do to sequester emergency funds?

Sequestering is just more a mechanical device than anything else. Did you make that decision or somebody down at OMB?

Mr. DAWSON. You put your finger on the problem you face with the idea of across-the-board cuts, and that is one thing that we would ask you to consider giving us more flexibility.

When and where we are given guidance to make cuts across the board, I think sometimes we do things that don't make a lot of sense, and that is really what we have here.

The Congress has indicated its desire to make cuts across the board and not——

Mr. MYERS. Your request here for $3,069,500,000 anticipated those cuts, so if we come up with that dollar figure, we may juggle the figures within it, but it has the Gramm-Rudman in it, doesn't it?

Mr. DAWSON. That is right.

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RED RIVER CHLORIDE CONTROL PROJECT

Mr. WATKINS. Just quickly, you and I went down to Texas on the Red River chloride control project, and as you discovered down there, the local people have met their requirements in their agreement of a number of years ago before you and I even came on board of meeting the local commitment of dollars to correct the man-made pollution. But the Federal Government had an agreement they would take care of providing the federal money to take care of the natural pollution for the area and have the chloride control project.

Now as you can well understand after being down there, this project is absolutely a must for municipal and industrial water on the Red River and that vicinity.

Is the Federal Government going to assist us, or are they going to just continue to insist on additional local funds some way?

Mr. DAWSON. Mr. Watkins, as you know, there are an awful lot of problems that still——

Mr. WATKINS. This affects Mrs. Boggs' area, because salt water is going right down that river.

UNRESOLVED ISSUES

Mr. DAWSON. There are still an awful lot of unanswered questions about how that whole thing is going to work. The first demonstration area there is almost complete, I believe, but there are still some concerns about how the whole process will or will not work. Those issues have to be addressed. We are talking about water supply, again, and certainly there have been some contributions made. You and I have talked about means of crediting that contribution. It would certainly be our position that we would treat this as a water supply project and treat it with an awareness of the huge deficits that the Federal budget is faced with.

There is work underway. As you said, I went with you and Congressman Boulter to look at that, and we do want to try to work with you, but I don't think it is going to be an easy one because of the tremendous cost involved and because of the technology there.

Mr. WATKINS. Let me tell you the other reason it is difficult, and I would like the committee to see and understand, that this administration is asking for increased money for foreign aid and at the same time they will not fulfill the word the government gave to these hard-working patriotic people in Southern Oklahoma and Northern Texas on the agreement that they signed a number of years ago.

I cannot explain that. I cannot explain that to those people down there why their government has turned its back on them and the agreement that was made there a number of years ago, and our government says we can't afford it, but we are increasing funding for foreign aid.

POTENTIAL FOR FURTHER CORPS INVOLVEMENT

Now if you can explain that to the people, I wish you would, because that is what I am confronted with down there. I don't want to belabor it much longer, but I wanted to find out, and I would

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like for you, if you could, to find out what kind of help you could get us in resolving this issue.

Mr. BEVILL. Do you want him to answer that in the record?

Mr. WATKINS. Yes, sir, I would, and I appreciate your patience letting me have that.

[The information follows:]

ELIGIBILITY FOR CONSIDERATION AS NEW START

In order for the Arkansas-Red River Basin Chloride Control, Oklahoma, Texas and Kansas (Remaining Red) project to be eligible for consideration as a new start construction project, a local sponsor must be identified that is willing and able to cost share in this project consistent with the cost sharing and financing concepts proposed by the Administration. Several meetings have been held between representatives of the Corps of Engineers and the states of Texas, Oklahoma, Arkansas and Louisiana concerning cost sharing on the project, but no agreement has been reached to date. In this regard, the continuing role of the Corps of Engineers in this matter will be to work with the local interest and potential local sponsors through meetings, discussions and correspondence to assure their understanding of the current cost sharing requirements which must be met for this project to move forward. The Corps of Engineers will also be responsible for negotiating and securing an acceptable cost sharing agreement with a local sponsor.

WORK IN CHINA

Mr. BEVILL. At this time, I recognize Mrs. Boggs.

Mrs. BOGGS. This is a friendly inquiry. Where are you going to do the work in China?

Mr. DAWSON. We are not sure we will do any construction or engineering work in China. We are interested in developing some nation-to-nation relationships in the scientific and technical exchange area on a very deliberate basis. We think that we want to build on that very slowly. It may be that the U.S. private sector will have some opportunities opened up because we develop some country-to-country relations there, but we don't have any plans at the moment to pursue any construction. We have not been asked to.

Mrs. BOGGS. What planning and cooperative studies and things——

Mr. DAWSON. There may well be and, in fact, already are some limited scientific and technical exchanges in things like sediment studies, estuarine management, things like that, that we feel the Chinese have knowledge that we can gain, and we, in turn, can give them.

CONGRESSIONAL VISIT

Mrs. BOGGS. The reason I was asking the question is because at the end of 1975, early 1976, the Congresswomen went to China, and when I had been there previously with my husband and Jerry Ford, we were not allowed to go into Chang-Chuen Province because they were still having some trouble with bands of terrorists in the hills and so on.

And when the Congresswomen went, we went to Chang-Chuen, and the reason that we were allowed to go in was because they were on a huge flood irrigation project, and the chairman was a woman. And they wanted very much for us to be able to see this operation.

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I was just curious if perhaps we were going to go in and see what they have done there, they picked up where they left off in 960 A.D., and with the whole idea China has done it once, China can do it again. I was just curious—it was such a huge project.

Mr. DAWSON. I would appreciate it if before we get much further into this, we could talk with you about your thinking. Madam Qian is still a very senior official in water resources development in China, General Heiberg and I have had occasion to meet her, and she is a very impressive individual.

Mrs. BOGGS. She is indeed.

Mr. DAWSON. I am not sure whether it was Chang-Chuen or the Three Gorges project, but they are extremely big, and I think there are some very exciting opportunities for building friendships and for mutually beneficial scientific and technological exchanges with the Chinese in the area of water resources.

Mrs. BOGGS. As they were digging—the so-called volunteers—were digging the ditches, the farmers were running up with their wheelbarrows and getting all that wonderful top soil and putting it in their fields, and it was a very engaging occasion, and I think, as you say, we have a lot to learn from just the normal operation.

MUTUAL GAIN IN KNOWLEDGE

General HEIBERG. I would like to add to what the Secretary said and what you have just said about sharing. There is an awful lot that we can gain of knowledge from the Chinese. They are working in an environment that is not unlike the work we do in the Lower Mississippi and Delta area and for very small investments, theirs, we can get back information that we can use in the United States. We are going to be in a position of trading what we know about river and sediment movement and those items the Secretary mentioned. If it weren't so, I don't think we would be going.

Mrs. BOGGS. It wouldn't be cost effective for us to go. Thank you, Mr. Chairman.

COMMITMENTS

Mr. WATKINS. One last comment. I appreciate all the love and respect being shown on this particular occasion, and that is commendable, but I will offer an amendment to not allow one dime to be spent on foreign travel or anything else for the Corps if we don't fulfill our word to the people down there that we signed agreements with. In all respect, I will offer it in this subcommittee, the full committee or the House floor.

I believe the Corps should honor the word we have given to the people in my area of the country. They are as good as any group of people overseas, and I think the people on the House floor and throughout this committee and subcommittee feel that also. And that is what I propose to do, to not allow one dime to be utilized by the Corps in any foreign area if I can't get something done on the commitments made to my people.

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MOVING AHEAD

Mr. BEVILL. Are there any other questions? I would like to commend each of you for your answers and the way you have responded to these questions. Although you didn't always give us the answers we were hoping to hear, I think they have been commendable.

Mr. Secretary, I am sure you deserve a lot of credit for the increase in O&M funds, and also for construction funds. So maybe we can get some of these critical projects needed in the country underway with your good help and the help of others.

Mr. DAWSON. We are ready to go.

Mr. BEVILL. I have other questions I will submit and our colleague, Congressman Conte, has submitted some questions which you may answer for the record. Also Congressman Young, and other members of this committee have questions.

Additional Questions Submitted by Congressman Bevill

SEVEN INLAND WATERWAY PROJECTS

Mr. BEVILL. The Supplemental specifically provides for the start of land acquisition at seven inland waterway projects. Are there any conditions being imposed on the obligation of funds for these projects in FY 1986 or FY 1987.

Mr. DAWSON. We are proceeding on schedule and as authorized by the special provisions of Pub. L. 99-88 for all seven in FY 1986. The FY 1987 budget includes follow-on construction funds for the Oliver, Gallipolis and Bonneville projects and engineering and design funds for the Winfield, Grays Landing, Point Marion, and Mississippi River L&D 26 projects. As I indicated in my complete statement, the Administration intends to proceed with the implementation of the seven projects contingent upon the Congress not only funding 50 percent of the costs from receipts contained in the Inland Waterways Trust fund, but also increasing the existing fuel tax over the next 10 years, beginning January 1, 1988. Funds from the Trust Fund have been appropriated and we are optimistic that the increase in fuel tax will be forthcoming this spring, so that implementation can proceed in an orderly manner.

STUDIES ADDED BY THE FY 1985 SUPPLEMENTAL

Mr. BEVILL. $1,200,000 was appropriated in the Supplemental for nine studies. What is the status of each study and what funds are contained in the FY 1987 budget for the various studies?

Mr. DAWSON. I will provide an answer on each of the nine studies for the record. [The information follows:]

STUDIES ADDED BY THE SUPPLEMENTAL APPROPRIATIONS ACT, 1985 (P.L. 99-88)

Study name	Current actions	(Fiscal year 1987 budget amount
Brunswick Harbor, GA	Funds have been allocated to conduct the feasibility phase of the study at full Federal expense during fiscal year 1986.	500
Buffalo Harbor, NY	Reconnaissance study has been fully funded	0
Meredosia, Willow Ck, & Coon Run, IL	A general design memorandum reevaluation report has been initiated	0
South Kohala Water Supply, HI	Local interests have recently declined to participate in the feasibility phase of the study.	[1] 117
South Metropolitan Atlanta Region, GA	The funds have been allocated to conduct the feasibility phase of study at full Federal expense during fiscal year 1986.	0
St Petersburg Harbor, FL	Reconnaissance study has been fully funded	0
Tangier Island, Va	Restudy is underway, design & plans & specifications will be updated if project is economically justified.	0
Wabash River Navigability, IN	Reconnaissance study has been fully funded	[2] 200

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STUDIES ADDED BY THE SUPPLEMENTAL APPROPRIATIONS ACT, 1985 (P.L. 99-88)—Continued

Study name	Current actions	(Fiscal year 1987 budget amount
West Onslow Beach & New River Inlet, NC.....	Funds have been allocated to continue the study during fiscal year 1896.	0

[1] These funds will not be required.
[2] Feasibility phase of inland waterway to be at full Federal expense.

FY 1987 NEW CONSTRUCTION STARTS

Mr. BEVILL. The FY 1987 budget contains funding for the initiation of 19 new construction projects. Have the local sponsors for the 19 projects signed binding cost sharing agreements on these projects?

Mr. DAWSON. No, they have not. We only have sought and received Letters of Assurances which confirm the sponsors' willingness to participate in project construction under the proposed cost sharing and financial arrangements. If Congress approves the 19 new starts we will proceed quickly to obtain the required definitive and binding cost sharing and financial agreements.

Mr. BEVILL. What is the total Federal and non-Federal cost of the 19 projects?

Mr. DAWSON. The total cost of the 19 projects is $715.8 million, of which $450.4 million would be Federal and $265.4 million would be non-Federal. A breakdown by project is presented in Table A of my comlete statement.

Mr. BEVILL. What criteria was used in selecting these 19 projects for initiation?

Mr. DAWSON: A four step process was used in screening the potential candidates for new construction starts: eligibility, preliminary selection, prioritization, and selection. A copy of these criteria is attached.

[The information follows:]

Army Civil Works Program, FY 1987 new starts: Construction eligibility, preliminary selection, prioritization and selection criteria

Eligibility criteria

1. Project is authorized for construction, or favorably recommended for implementation in a feasibility study with the Chief of Engineers pre-authorization report complete by 3 May 1985.
2. Project has net NED benefits at applicable interest rate, unless project authorization was not based upon formal benefit/cost evaluation.
3. Preconstruction planning fully funded by 30 September 1986.

Preliminary selection criteria

1. Appropriate evaluation of project merits contained in Corps report.
2. Project is in compliance with the applicable environmental statutes, appropriate to the current stage of implementation.
3. Phase I GDM, Combined GDM, or Reevaluation Report approved by 1 July 1985.
4. Project cost and benefit estimates are firm, and when estimates are based on Phase II GDM studies, the Phase II GDM scheduled for approval by 1 August 1986.
5. If postauthorization change required, only routine issues involved.
6. No known or reasonably anticipated conditions or unresolved issues exist which might prevent project from being placed under construction by 30 June 1987.
7. Draft of Environmental Impact Statement (EIS) or supplement to be filed with EPA by 1 September 1985. Final EIS or supplement scheduled to be filed with EPA by 1 May 1986.

Prioritization criteria

Priority Group 1.—Projects with a benefit-cost ratio (BCR) greater than 1.0 at the current interest rate when *only* the mainline benefits of hydropower, M&I/AG water supply, commercial navigation, and flood damage reduction are considered.

Priority Group 2.—Projects with a BCR greater than 1.0 at the current interest rate when *all* benefits are considered, provided a significant amount (over 20 percent) of the benefits are in the mainline categories listed above.

Priority Group 3.—All other projects.

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Selection criteria (for project recommendation)

1. Project meets the *eligibility and preliminary selection criteria*, is in Priority Group 1 and/or 2 indicated above, and Federal involvement in implementation is warranted, or other special conditions apply.
2. Project sponsor has indicated willingness to meet the Department of the Army's cost sharing guidelines.
3. Project has a benefit-cost ratio (BCR) greater than 1.0 at a 10 percent interest rate.

COST SHARING CRITERIA

Mr. BEVILL. In the event H.R. 6 or similar authorizing legislation is not enacted into law this session, what local cost sharing would be applied to the projects?

Mr. DAWSON. We would apply the same criteria as that being applied to the 41 projects authorized and funded by the FY 1985 Supplemental Appropriation Act. I will provide a list of the cost sharing criteria applicable to the new starts.

[The information follows:]

SUMMARY: ARMY COST-SHARING OBJECTIVES FOR CONSTRUCTION

Category	Non-Federal Share of Assigned Capital Costs[1]
1. Flood Damage Reduction (Rural & Urban) and Rural Drainage:	
a. Reservoirs.	35% including a 5% cash contribution during construction.
b. Local Protection Projects[2]	
(1). LERR greater than 20% of toatal assigned cost..	LERR, plus 5% cash contribution.
(2). LERR equal to or less than 20% of total assigned capital cost..	25%, if paid during construction; or 35%, if paid over time. If reimbursed over time, LERR plus 5% cash contribution must be provided during construction, and balance after construction.
2. Commercial Navigation:	
a. Harbors/Channels:	
(1) LERR and dredged material desposal areas	100 percent.
(2) Local access or berthing channels and segments of channels and harbors constructed or maintained by non-public interests.	100 percent.
(3) General Construction—During Construction:	
(a). Defense-related Features	None.
(b). All Other Features:	
(i). Depths to 20'	10 percent
(ii). Depths over 20' to 45'	25 percent.
(iii). Depths over 45'	50 percent.
(4). General Construction—Reimbursement within 30 years. [Contengent upon the extent (%) of costs for LERR and disposal areas to the construction costs for the general navigation features.]	
(a). If the % is equal to or less than 10%:	An additional 10% over time will be required.
(b). If the % is greater than 10% but less than 20%:.	A waiver of an amount in excess of 10% may be recommended.
(c). If the % is greater than 20%:	A waiver of the full 10% repayment provision may be recommended.
b. Inland Waterways (Channels, and Locks & Dams only)	No local sponsor required, but 50% of cost will be provided from the Inland Waterway Trust Fund.
3. General Recreation (including Recreational Navigation)	50 percent.
4. Water Supply:	
a. Municipal & Industrial	100 percent.
b. Agricultural	35 percent.
5. Fish and Wildlife Mitigation	Costs to be allocated to basic project purposes and shared on the same percentage basis as construction costs for each purpose.

[1] Assignable separable & joint project implementaton costs, including preconstruction planning and engineering (CP&E costs after 30 September 1985 and all AE&D). Excludes allocations for O&M which are cost shared on a differenct basis.
[2] LERR = lands, easements, rights-of-way & relocations.

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CORPS ACCOMPLISHMENTS

Mr. BEVILL. this is your second appearance before the Subcommittee as Chief of Engineers. Last year you shared your thoughts with us regarding the Corps performance over the years and what the future holds for the Corps. Describe the accomplishments of the Corps during the past year.

General HEIBERG. In our studies program funded under the General Investigations account, actions by the Division Engineer were completed on 21 preauthorization reports in FY 1985. We expect to complete action on the reconnaissance phase of about 26 studies and 5 feasibility phase studies in FY 1986. In addition, the follow-on planning and engineering work is being funded for 65 projects in FY 1986, as part of 109 such projects which have been funded under our Continuation of Planning and Engineering (CP&E) program since it was initiated with Congressional support in FY 1982. The CP&E work on 48 of the 109 projects will be completed by the end of FY 1986.

Under our Review For Deauthorization program, 476 projects have been deauthorized to date, based on recommendations contained in the first ten annual reports printed by the Congress. Work is continuing under this program and we expect to complete 40 more such reviews in FY 1986.

Our Construction, General program has greatly increased due to the 39 construction new starts added by the FY 1985 Supplemental Appropriations Act to the 132 regular construction projects, 7 major rehabilitation projects, and 4 dam safety assurance projects underway in FY 1986. Thirteen projects are scheduled for completion.

Under the construction program for the Mississippi River and Tributaries project, work continued on the Old River Auxiliary Control Structure which is scheduled for completion late in 1986. Preconstruction Planning and Engineering has been started on those two new construction starts added by the FY 1985 Supplemental.

Our activities and outlay levels for our operation and maintenance program in fiscal year 1985 and fiscal year 1986 are essentially the same—over $1.3 billion which continues the operation of over 350 harbors and the 25,000-mile inland wateways system. We did do some emergency dredging, first in Apalachicola Bay, Bayou Coden, Bayou LaBatre, Dauphin Island Bay, Gulfport Harbor, Pascagoula Harbor, and Perdido Pass Channel as a result of Hurricane Elena and, second, we are doing additional dredging in Ventura Marina as a result of storm damage and, thirdly, we have dumped 300 tons of stone in a hole in the breakwater at Redondo Beach (Kings Harbor) and will dump additional stone to repair the breakwaters at Redondo Beach (Kings Harbor) and San Diego River & Mission Bay. In addition, four waterway projects are in caretaker status this fiscal year. The extent of commercial traffic moving on these waterways does not justify any increase in the level operation beyond the caretaker status.

NON-MILITARY ACTIVITIES IN FOREIGN COUNTRIES

Mr. BEVILL. Please bring the Committee up to date on the work the Corps is doing in foreign countries.

Mr. DAWSON. For purposes of updating the committee, the Army Corps of Engineers' non-military cooperative efforts with foreign governments should be divided into three broad categories which are outlined in the attached documents: (I) Non-military technical assistance for developing countries in water and related land resources which is fully reimbursed by the foreign government involved, by the international organization involved, or by the authorized foreign assistance program of another U.S. Government agency; (II) Activities under mutually beneficial scientific and technological exchange agreements with developed countries, primarily in the area of water resources research and development, which directly benefit U.S. domestic Civil Works programs (since each country that participates in this second category of activities obtains benefits, each country bears the costs of its own participation in these programs); and (III) Other non-military international activities. Also attached is a table showing, for each of these three categories, the total FY 1987 cost and the source of financing, namely, General Investigations, other Civil Works appropriations, or reimbursement.

[The information follows:]

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I. Non-Military International Technical Assistance Provided by Army Corps of Engineers and Reimbursed by Other U. S. Government Agencies, International Organizations, or Foreign Governments.*

Country	Date	Project	Source of Funding	$
AFRICA				
AID countries (Cameroon, Kenya, Senegal, Somalia, Sudan, to date)	84-Present	Computer Aided Cost Estimating System for construction projects.	AID	40,000
Gabon	81-83	Shoaling study of channel to Owendo port.	Gabon	195,000
Niger Basin Authority (Benin, Cameroon, Chad, Guinea, Ivory Coast, Mali, Niger, Nigeria, Burkina-Fasso)	80-Present	River systems analysis of Niger River (2 employees in Niger, backup in Vicksburg, MS).	AID	1 mil. (4.5 mil., next 3 years)
Sudan	81-85	Advice on sediment and debris problem at power plant intakes of El Roseires Dam on the Blue Nile. Served as Sudan's/AID's design and contract agent for procuring dredge and other equipment.	AID	295,000
Swaziland	81-85	Review of studies prepared by consultants for development of river basin shared with Republic of South Africa.	Swaziland	65,000

KEY: AID - U. S. Agency for International Development, International Development Cooperation Agency, Department of State
TDP - U. S. Trade and Development Program, International Development Cooperation Agency, Department of State
UN - United Nations
USIA - U. S. Information Agency

* Non-military technical assistance provided by the Army Corps of Engineers which is reimbursed directly by foreign governments is generally provided under Section 607 of the Foreign Assistance Act of 1961, as amended (22 USC 2357), after approval by the Department of State.

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Country	Date	Project	Source of Funding	$
ASIA				
Bangladesh (added to 81 India trip)	81	Hydrological network design.	UN	1,810
Bangladesh, Burma, People's Republic of China, Indonesia, Malaysia, Pakistan, Philippines, Sri Lanka, Thailand	84-85	Inland Water Transport Study, 9 S.E. Asia countries.	UN	90,000
India	81	River runoff forecasting systems.	UN	10,039
	85	Ganges River cleanup.	AID	10,000
	85	Mathematical modeling and computer application to water resource projects.	UN	9,000
Japan	84-85	U. S. Pavilion at World Trade Fair, construction management.	USIA	150,000
People's Republic of China	79-Present	Activities under 1979 Science and Technology Agreement (Hydropower Protocol), technology exchange in hydropower, flood control, estuary regulation, navigation, training, and laboratories.	People's Republic of China/TDP	320,000
Thailand	85	Advice on drainage and flood control in Bangkok.	AID	18,264
LATIN AMERICA				
Argentina	84	Advice on sedimentation, water quality, and dredging of ports.	Organization of American States	2,000
Barbados	84	Second opinion on shore erosion affecting Barbados economy.	Barbados	3,850

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Country	Date	Project	Source of Funding	$
Mexico	83-84	Flood control.	World Bank	26,000
	84	Flood control, Lazaro Cardenas.	World Bank	10,000
	85	Computerized Beach Profile Analysis.	Mexico	13,000
Panama	84-85	Construction and disposal methodology for widening canal.	Panama Canal Commission	155,000
MIDDLE EAST				
Saudi Arabia	83-85	Port aspects of study of future infrastructure needs for U. S.-S. A. Joint Commission on Economic Cooperation.	Saudia Arabia	49,000
Saudia Arabia and Sudan	79-81	Advice on environmental impact of Red Sea mining.	Red Sea Commission	14,000
Qatar	78	Dredging operations evaluation.	Qatar	26,374
OTHER				
Canada	79	Training in "Building Loads Analysis and System Thermodynamics" Program.	Canada	4,200
	81	Investigation of cracks in powerhouse foundation.	Canada	7,900
	81	Sharing of value engineering information.	Canada	4,774
Italy	85	Advice on floodplain management.	Italy	21,500
United Nations	81	Report on world hydro-electric power potential.	UN	6,300

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II. Activities Under Mutually Beneficial Scientific and Technological Cooperative Agreements Between the Department of the Army and Foreign Governments.

A. Army Cooperative Research and Development (R&D) Agreements with Foreign Governments that Directly Benefit U. S. Civil Works Programs (Under Direction of Other U. S. Government Agencies).

1. Environmental Protection Agency (EPA)-Japan: Agreement between the United States of America (EPA) and the Government of Japan on Cooperation in the Field of Environmental Protection (signed in 1975) - Army Corps/Japan Memorandum of Understanding (MOU) on Management of Contaminated Bottom Sediments (1978).

a. Costs: Sponsorship of annual meetings to exchange technical and scientific information among U. S. Government agencies and Japan; $1,000 per year for translator, plus official travel and labor costs.

b. Benefits: Saved $250,000 by obtaining Japanese data on resuspension of solids by conventional dredges for dredged material research program; saved $1,000,000 by using Japanese test results and data relating to dredging of contaminated sediments; saved $1,000,000 by using the Japanese anti-turbidity overflow system for enhancing water quality during hopper dredge operations; saved $2,000,000 by using Japanese technology for treatment of highly contaminated dredge material.

2. Department of Housing and Urban Development (HUD)-U.S.S.R.: Agreement between the United States of America (HUD) and the U.S.S.R. on Cooperation in the Field of Housing and Other Construction (signed June 1974; extended in 1979 and 1984) - Army Working Group Protocol on Construction under Complicated Climatic and Geological Conditions (signed May 1985).

a. FY 84 and FY 85 Costs: $10,000 for travel to U.S.S.R. to participate in Working Group sessions of U. S./U.S.S.R. agreement for Cooperation in the Field of Housing and Other Construction.

b. Benefits: The U.S.S.R. is ahead of the U. S. in practical experience in cold regions because of active involvement in construction and engineering for the past several decades. Although U. S. efforts to date have been military funded, and therefore intended primarily to benefit the Corps' military research, development, testing and evaluation (RDT&E) programs, substantial spin-off benefits accrue to Civil Works R&D relating to improved cold regions construction practices. An important area is the improvement of foundation design in regions of significant permafrost. An additional area of Soviet expertise relates to their advanced centrifuge testing

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programs. The centrifuge modeling technique has extensive Civil Works applications, such as earthquake stability for dam safety assessment, and obtaining knowledge of their procedures will enhance ongoing U. S. risk assessment R&D. The U. S. also benefits from exchange of scientific and technological data relating to design and construction of cold regions port facilities and repair, maintenance, and rehabilitation of hydraulic structures.

3. Department of Transportation (DOT)-People's Republic of China (PRC): Agreement between the United States of America (DOT) and the Ministry of Communications of the PRC on Scientific and Technological Cooperation in the Field of Transportation (signed in 1983). Supplementary Agreement adding the Army Corps of Engineers as party signed by Secretary Dole in August of 1985. Proposed Annex between the Army Corps of Engineers and the PRC Ministry of Communications on Scientific and Technological Cooperation in the Field of Port Engineering and Waterborne Transportation.

   a. Anticipated Costs: FY 87 - 66,000.

   b. Anticipated Benefits: The Chinese have been collecting field data relating to shoreline positions, river and estuary hydraulics and sedimentation, and geotechnical engineering data for several hundred years. This large volume of historical data will be made available to the Corps at no cost and will be particularly useful in developing predictive models of river and estuary processes related to navigation channels and port development. Also, the collection of present-day field data by the Chinese will be at no cost to the U. S., yet the data will be fully available for analysis by U. S. scientists and engineers. Thus, an understanding of prototype scale processes will be obtained in problem areas for which only laboratory studies are feasible within the U. S.

B. Army Cooperative R&D Agreements with Foreign Governments that Directly Benefit U. S. Civil Works Program (Under Direction of the Army).

1. Netherlands: Memorandum of Understanding between the Army Corps of Engineers and the Netherlands Ministry of Transport and Public Works concerning Scientific and Technological Cooperation on Dredging and Dredged Material Disposal (signed April 2, 1981).

   a. Costs: Funds expended under this agreement are R&D funds which would have been expended in the designated research area without the benefit of cooperative funding by the Dutch. Dutch scientists' salaries are paid by the Dutch Government; the Waterways Experiment Station (WES) of the Army Corps of Engineers provides funds for technician labor and materials. Specific costs are itemized as follows:

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(1) Institute for Soil Fertility/WES:
FY 81-83 - WES costs, $25,000; Dutch costs, $10,000

(2) Institute for Hydrobiological Research/WES:
FY 84 - WES costs, $16,000; Dutch costs, $18,000
FY 85 - WES costs, $25,000; Dutch costs, $10,000
FY 86 - WES costs, $25,000; Dutch costs, $10,000

(3) Netherlands Organization for Applied Scientific Research/WES:
FY 85 - WES costs, $80,000; Dutch costs, $25,000
FY 86 - WES costs, $80,000; Dutch costs, $3,000

b. Benefits of U. S./Dutch Cooperative R&D: The data and information for each dollar spent; cost of R&D is about 1/2 cost of similar R&D in U. S.; takes advantage of existing Dutch data, allowing much larger data set than WES data alone; Army Corps R&D projects on "Long-Term Effects of Dredging Operation" and "Field Verification" benefit from enhanced test results due to sharing of advanced Dutch technology; application of advanced Dutch techniques to U. S. environmental problems.

2. Finland: Memorandum of Understanding between the Army Corps of Engineers and the Technical Research Centre of the Republic of Finland on Technical-Scientific Cooperation (signed December 1983).

a. Costs: FY 85 - $49,416 (100 percent military funded, primarily for research assistance by Finnish scientists in U. S. laboratories).

b. Benefits: Technical consultations and exchanges of scientists have greatly contributed to solving various winter navigation problems and increased U. S. capabilities and knowledge in the area of ice dynamics and cold weather technology. Although U. S. efforts to date have been military funded and intended primarily to benefit the Army Corps' RDT&E programs, substantial spin-off benefits accrue to Civil Works R&D relating to improved cold regions construction practices.

3. People's Republic of China: Agreement relating to Scientific and Technological Cooperation between the United States of America and the PRC (1979).

- Proposed Protocol between the Department of the Army of the United States and the Ministry of Water Resources and Electric Power of the People's Republic of China (PRC) on Scientific and Technological Cooperation and Laboratory Activities in the Field of Water Resources (Umbrella Agreement).

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a. Proposed Annex between the Army Corps Waterways Experiment Station and the PRC Nanjing Hydraulic Research Institute on Hydraulic Studies.

(1) Anticipated Costs: FY 87 - $66,000.

(2) Anticipated Benefits: Utilization of Chinese laboratory facilities by U. S. scientists for data analysis, model testing, and other research and development studies related to the cooperative effort will be at no cost to the U. S. In addition, the personnel exchange and training agreements provide unique opportunities for U. S. professionals (particularly young scientists and engineers) to participate in technically challenging problems that are tied to major infrastructure construction projects. Finally, since the Chinese have been collecting data for several hundred years, a valuable data set exists which will be particularly useful in developing predictive models of river and estuary processes related to navigation channels, hydraulic engineering, and water resources. This large volume of historical data will be made available to the Corps at no cost.

b. Proposed Annex between the Army Corps Waterways Experiment Station and the PRC East China Technical University for Water Resources on Sedimentation Studies and Muddy Coast Analyses.

(1) Anticipated Costs: FY 87 - $80,000.

(2) Anticipated Benefits: Utilization of Chinese laboratory facilities by U. S. scientists for data analysis, model testing, and other research and development studies related to the cooperative effort will be at no cost to the U. S. Also, collection of present-day field data by the Chinese will be at no cost to the U. S., yet the data will be fully available for analysis by U. S. scientists and engineers. Thus, an understanding of prototype scale processes will be obtained in problem areas for which only laboratory studies are feasible in the U. S. An additional benefit is that the Chinese will in many cases purchase advanced instrumentation for field data collection. If not, the cost will be shared with the U. S. Finally, U. S. scientists and engineers will be able to evaluate some of the PRC's innovative techniques, particularly in studies of sediment motion initiation and sediment movement.

4. France: Agreement between the Army Corps of Engineers of the United States and the Department of Economic and International Affairs of the Republic of France on Dredging, Nautical Channel

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Design, Dams and Jetties Building and Shore Protection (signed August 1983). No expenses have as of yet been incurred since no activities have been undertaken; programs and proposed projects are still under consideration.

a. Anticipated costs: FY 87 - $10,000.

b. Anticipated Benefits: French world renown expertise will be applied to interpretation of WES bioassay tests to improve U. S. capability to correlate lethal concentrations of toxic metals (found in dredged material) with tissue levels of indicator species (earthworms).

III. Other.

A. Foreign Research and Development Contracts (General Investment Research and Development Funded).

1. England: WES contract with University College London to develop directional shear cell to measure strength of sand/silt soils.

a. Costs: $75,000.

b. Benefits: Aids research on mechanical behavior of soil and evaluation of math models; applicable to Corps projects where accurate strength determinations are required for design.

2. England: WES contract with Cambridge University for earthquake model tests in its centrifuge for seismic simulations.

a. Costs: FY 83-86 - $140,000.

b. Benefits: Seismically induced settling is potentially very damaging. At present, there are no verified methods of seismic settling analysis. Results of these unique series of tests will have specific application to the Corps geotechnical R&D and projects (dams, buildings, etc.) involving blast, vibratory, and earthquake phenomena and behavior.

3. Italy: WES contract with Technical University of Turin (Italy) to investigate feasibility and develop technology for tests of construction materials.

a. Costs: $50,000.

b. Benefits: Will provide U. S. with a new technology for laboratory calibration of devices used for in-place measurements of the stability of sand-soil fill structures, which is more economical and reliable than the use of field calibration techniques.

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4. France: WES contract with Compagnie De Prespection Geophysique Francaise (France) to assess state-of-the-art application of microgravity to investigation of existing structures (roads, levees, railways, and dams).

   a. Costs: $50,000.

   b. Benefits: The final report documenting unique capabilities of the French techniques (including case histories) will benefit U. S. Government by illustrating more cost-effective ways to investigate existing structures.

5. Canada: WES contract with University of British Columbia on earthquake engineering and dynamic effective stress analysis.

   a. Costs: $10,000.

   b. Benefits: Unique knowledge and capabilities not available in U. S. fill gaps in areas of earthquake engineering and dynamic effective stress behavior analysis, resulting in improved design practices for Corps structures.

6. Multinational: Technical assistance from internationally renowned experts, invited to review WES earthquake engineering R&D programs.

   a. Costs: $10,000.

   b. Benefits: Improvement of Corps R&D programs by enhancing technical quality, and reducing costs of both the R&D project itself and subsequent projects designed using R&D results.

B. U. S. Representation on Multinational Committees.

1. International Association for Hydraulic Research Laboratory Wave Measurement Committee (U. S./West Europe/Canada/Japan):

   a. Costs: $2,000.

   b. Benefits: U. S. input to setting of international standards for lab conditions.

2. U. S. - Japan Cooperative Plan in Natural Resources; Panel on Wind and Seismic Effects (Three Army Corps Members):

   a. Costs: $15,000 per year.

   b. Benefits: Exchange of valuable scientific and technological information.

3. WES Participation in 11th International Conference on Soil Mechanics (San Francisco, August 1985):

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a. Costs: Reimbursed by conference registration fees.

b. Benefits: WES Publications Committee collected, edited, and prepared for publication the six-volume proceedings; and assisted in other conference management. These efforts enhance the technical expertise of the WES staff, and reflect favorably on the image and reputation of U. S. scientists within the international technical community.

4. Participation on International Standards Organization (ISO): Chief of WES Structures Laboratory serves as the American National Standards Institute (ANSI) representative on ISO, responsible for developing international specifications and test methods for Portland Cement Concrete.

a. Costs: $4,000 per year.

b. Benefits: Reduced costs for U. S. military and private industry when bidding on foreign projects achieved through influencing selection of international specifications.

5. Participation in the Permanent International Association of Navigation Congresses (PIANC):

a. Costs: $70,000 per year (covering expenses associated with participation in Working Groups of Permanent Technical Committees, sponsoring regional technical seminars and workshops, and the printing and distribution of technical reports prepared by the organization).

b. Benefits: PIANC is the world's oldest and largest international engineering/scientific organization concerned with inland and marine navigation. Army participation provides knowledge and experience that is very helpful in the planning, construction, and maintenance of Civil Works projects in the U. S.

C. Attendance at Conferences.

1. Participation in International Societies and Symposia Relating to Concrete R&D:

a. Costs: $20,000 per year.

b. Benefits: Participation permits Corps to stay current on international breakthroughs in engineering design, construction, repair, and rehabilitation, and materials technology.

2. North Sea Coastal Engineering Group: Bi-annual meeting on current R&D and cooperative efforts.

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a. Costs: $1,500 biannually.

b. Benefits: Army Corps obtains up-to-date review of most European coastal engineering R&D developments. Works on mutually-beneficial solutions to technical problems.

3. European Wave Modeling Group: WES sits in on common market activities to develop new level of wave prediction technology. Annual meetings.

a. Costs: $2,000 per year.

b. Benefits: U. S. obtains latest R&D results for no cost. No U. S. studies of this kind, although important to improvement of U. S. wave prediction techniques for enhanced design of coastal and off-shore projects.

D. Cooperative Training Programs.

1. Waterways Experiment Station:

a. Visits of Foreign Nationals:
FY 80-85: 2,851 individuals.
Costs: Variable, depending on nationality.

b. Long-term training of Foreign Nationals:
FY 80-85: 75 individuals.
Costs: Variable, depending on nationality.

2. Cold Regions Research and Engineering Laboratory:

a. Foreign travel for technical discussions on R&D (non-conference):
FY 83-85: 7 visits.
Costs: $16,750.

b. Visits of Foreign Nationals:
FY 83-85: 16 individuals.
Costs: $20,000.

c. Long-term training of Foreign Nationals:
FY 83-85: 9 individuals.
Costs: Variable, depending on nationality and project.

E. Miscellaneous.

1. Cost-Free Data Exchange with Japan:

a. Army Corps of Engineers has benefited from the exchange of information on earthquake motions. Hundreds of Japanese records have more than doubled U. S. inventory of

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strong-motion data, allowing development of better prediction of earthquake effects at engineering sites.

b. Army Corps of Engineers has obtained information on Japanese technology and design practices for breakwaters and jetties for use in preparing an engineer manual.

2. Collection of Earthquake Engineering Data: Earthquake engineering field data collected from various nations throughout the world to develop criteria for recognizing earthquake source zones. Site-specific data required from Australia, China, Italy, Bulgaria, Nicaragua, Guatemala, Ecuador, Japan, Argentina, and Mexico.

a. Costs: Earthquake Engineering Research Institute, National Academy of Sciences, Organization of American States, and Army contribute about $3,000 per data collection event.

b. Benefits: Improved criteria for recognizing source zones, and developing maximum earthquake force predictions.

3. U. S. Government Foreign Assistance Activities:

a. WES assistance on Peruvian flood control and river regulation:
Costs: AID - $2,600; Army - $7,700.

b. WES assistance in Puerto Rican landslide rescue efforts (seismic monitoring):
Costs: FY 85 - $20,000 Army.

4. Army Corps of Engineers International Exchange of Scientific and Technological Information:

a. Costs: FY 87 - $25,000.

b. Benefits: By far the greatest benefit for the Army Corps of Engineers is the obtaining of results and information developed by researchers in other countries which apply directly to current research and development needs in the U. S. Throughout the fields of water resources, cold region processes, geotechnical investigations, and many others, innovative and advanced technologies are being developed by scientists and engineers outside the U. S. Through written and verbal exchange of data, reports, papers, etc., the Civil Works research and development community maintains its awareness if such advances and seeks to apply latest results to improve Civil Works methodologies. Thus, costs for this effort are largely for translation of technical guidance and results into English, preparation and distribution of the information, and extraction of appropriate material from international publications. In addition, by sharing results

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of both U. S. and international experiences, the need for costly duplicative experiments, tests, and report preparation is obviated, and a spirit of cooperative responsibilities produces higher quality and more cost-effective technical output. Specific examples of international cooperation on research and development activities were listed previously. This effort seeks to capitalize on international, technologically sound opportunities for application to Civil Works research and development programs as they develop.

5. Department of State/Department of the Army Study on Alternatives to the Panama Canal: Five-year study commission on alternatives to the present Canal (1984 to present).

   Costs: $110,000 per year.

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SOURCE OF FUNDING NON-MILITARY
ACTIVITIES IN THE FY 1987 CIVIL WORKS BUDGET REQUEST

The following table shows the total FY 1987 cost and source of funding for each of the three categories of non-military cooperative efforts with foreign governments -- (1) Non-Military International Technical Assistance Provided by Army Corps of Engineers and Reimbursed by Other U. S. Government Agencies, International Organizations, or Foreign Governments; (2) Activities Under Mutually Beneficial Scientific and Technological Cooperative Agreements Between the Department of the Army and Foreign Governments; and (3) Other Non-Military International Activities. For example, considering category 2, the total FY 1987 cost is estimated to be $441,000. Of this amount, $216,000 would be furnished from the research and development subitem under General Investigations and the remaining $225,000 would be furnished from the new $250,000 budgeted item under the line item entitled, "Cooperation with Other Federal Agencies, States, Non-Federal Interests, and Foreign Governments."

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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS - CIVIL WORKS
FY 1987 BUDGET REQUEST: NON-MILITARY COOPERATIVE EFFORTS WITH FOREIGN GOVERNMENTS
(Dollar amounts in thousands)

Category	Total FY 87 Cost (1)	FINANCED FROM: General Investigations R&D Subitem (2)	General Investigations $250K Request (3)	Other CW Approp. (4)	Reimbursed 1/ (5)
1. Non-Military International Technical Assistance Provided by Army Corps of Engineers and Reimbursed by Other U. S. Government Agencies, International Organizations, or Foreign Governments	500	0	0	0	500
2. Activities Under Mutually Beneficial Scientific and Technological Cooperative Agreements Between the Department of the Army and Foreign Governments	441 2/	216	225	0	0
3. Other Non-Military International Activities	950	525	25	400	0
TOTAL	1,891	741	250	400	500

1/ Reimbursed by foreign government, by the international organization involved, or by the authorized foreign assistance program of another U. S. Government agency.

2/ These international activities directly benefit U. S. domestic Civil Works programs; accordingly, the U. S. bears the costs of its own participation.

CORPS EMPLOYEES OVERSEAS

Mr. BEVILL. How many Corps employees are engaged in overseas work?

Mr. DAWSON. Although there are numerous Army Corps of Engineers employees engaged in overseas military work, particularly in conjunction with foreign military sales cases such as the construction program in Saudi Arabia, or in support of U.S. Forces stationed abroad, there are very few Army Corps employees engaged in non-military overseas work on a full-time basis. There are at the present time two Army Corps of Engineers employees permanently assigned overseas on non-military work, both stationed in the City of Niamey, Niger. These particular Army Corps of Engineers employees are working in conjunction with the U.S. Agency of International Development in conducting a systems analysis of the Niger River for the nine-country Niger Basin Authority.

Other Army Corps of Engineers employees are temporarily assigned overseas (usually for no more than several weeks) to work on the varied projects described in response to your previous question relating to the status of the Army Corps of Engineers international activities.

COST SHARING OF FY 1987 NEW BUDGETED STUDIES

Mr. BEVILL. Have local sponsors agreed to cost share the 12 new studies contained in the budget?

Mr. DAWSON. No, sir, the local sponsors have not yet been asked to cost share these studies because the budget request is for the reconnaissance phase only, which is fully federal funded. However, based on discussions with the local sponsors, we believe that they understand the two phase planning process and that they would be willing to cost share the feasibility phase of the study, provided the prospects were good that a solid project would emerge from the feasibility study.

EFFECTIVE DATE OF IMPLEMENTATION

Mr. BEVILL. Throughout the justifications, reference is made to "effective date of implementation" in connection with the local share of feasibility studies. Could you explain what that phrase means and how the specific date of implementation is determined?

Mr. DAWSON. Yes. As you know, conditional cost sharing contracts have been executed by the Corps of Engineers and the local sponsors of feasibility studies which are being conducted under the two phase study process. The conditional contracts provided for an effective date of implementation of cost sharing, which was 60 days from the date of notification of the decision to proceed with cost sharing. For studies which had contracts executed prior to January 1, 1986, that notification date was January 15, 1986, making the effective date of implementation March 15, 1986. The decision to implement cost sharing after January 1, 1986, that is, after the close of the first session of the 99th Congress, was a deliberate one. We remain optimistic that Congress, one day very soon, will legislate in this important area.

COST SHARING OF FY 1987 NEW CP&E STUDIES

Mr. BEVILL. What are the cost sharing requirements for the 9 new continuation of planning and engineering items contained in the budget?

Mr. DAWSON. The cost sharing requirements are the same as those historically required for advance engineering and design; that is, no cost sharing is required of local sponsors during the continuation of planning and engineering studies. The sponsors have all agreed, however, to sharing the project costs, including those incurred for the CP&E studies, at the time of construction.

RECREATION CONSTRUCTION AT FULL FEDERAL EXPENSE

Mr. BEVILL. Last year we discussed the funding of recreation development at five projects authorized prior to 1965 when recreation was a total Federal responsibility. The 1985 Supplemental Act directed that recreation facilities at the Ouachita and Black Rivers, Arkansas and Louisiana; New Melones Lake, California; Saylorville Lake, Iowa; Copan Lake, Oklahoma; and Sardis Lake, Oklahoma, projects be constructed at full Federal expense. What is the status of work at each location and what funds are being allocated to the various projects?

Mr. DAWSON. In accordance with the direction in the FY 1985 Supplemental Appropriations Act, funds have been allotted to the Saylorville Lake and New Melones Lake projects in accord with the allocations set forth in the conference committee report accompanying the 1986 Energy and Water Development Appropriation Act.

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Funds will be allotted to the Copan Lake and Ouachita and Black Rivers projects, consistent with the 1986 conference committee report allocations, as soon as the scope of facilities to be constructed has been defined, reviewed and approved. At Sardis Lake, the full $5 million listed in the 1986 conference committee report has been allotted for road improvements. In addition, we will make transfers to these five projects in FY 1986 to construct additional recreation facilities at full Federal expense up to the amount allocated for each one for this purpose in the FY 1985 conference committee report.

The Corps informs me that construction of the additional recreation facilities will begin in April 1986 at New Melones Lake and in July 1986 at the other four projects. All work is expected to be completed by December 1988. A summary of the funds which either have been or will be allotted, together with the funding source, is as follows:

Project	Funds Allotted or to be Allotted	Funding source	
		FY 1986 Conference Allocation	Planned Transfer
Ouachita and Black Rivers, AR & LA	6,000,000	3,500,000	2,500,000
New Melones Lake, CA	4,500,000	3,000,000	1,500,000
Saylorville Lake, IA	5,000,000	2,500,000	2,500,000
Copan Lake, OK	3,000,000	1,250,000	1,750,000
Sardis Lake, OK	2,700,000	0	2,700,000
Total	21,200,000	10,250,000	10,950,000

Beyond the $21.2 million which we either have or will allot for additional recreation facilities construction at full Federal expense, we have not budgeted in FY 1987 funds for further recreation facilities construction.

NATIONAL COUNCIL ON PUBLIC WORKS IMPROVEMENT

Mr. BEVILL. In last year's hearings we discussed the National Council on Public Works Improvement and you indicated the Council had not yet been appointed. What is the status of the Council and what Corps funds have been allocated to the Council in FY 1986 and 1987?

Mr. DAWSON. In July 1985, the fifth and final Council member was named. The Council members are: Mr. Robert Farris, of Tennessee; Mrs. Frieda Wallison, of Maryland; Mr. Joseph Giglio, of New York; Mr. Peter Goldmark, of New York; and Mr. Freeman Holmer of Oregon. We helped to organize their first meetings and provide information to serve as a baseline for initiating their task. In December, the staff director, Ms. Nancy Rutledge of Washington, was selected. The Council is housed in room 716, 1111, 18th St., N.W., Washington, D.C. As stipulated in P.L. 98-501, the Corps is providing administrative support to the Council. The Council expects to have a research plan available by late March. Three reports are scheduled for publication: the first in November 1986, the second by the summer 1987, and the final report by late fall 1987.

We have provided $3.2 million to the Council from FY 1985 funds. No further funding is anticipated.

BID RIGGING ON DREDGING PROJECTS

Chairman BEVILL. An article in the January 27, 1986, edition of the "Washington Post" reported a settlement with a private dredging contractor of Federal Government claims for civil damages stemming from bid rigging on U.S. Army Corps of Engineers dredging projects. How widespread is the bid rigging problem affecting Corps projects?

Secretary DAWSON. The Department of Justice presently has three investigations ongoing into bid rigging of Corps of Engineers dredging contracts. The investigations are divided into dredging projects on the North Atlantic Coast, South Atlantic Coast, and Gulf Coast. To date only the South Atlantic investigation has produced sufficient evidence to prosecute companies and individuals for bid rigging. Two companies and one individual have been convicted of violations of the Sherman Antitrust Act. We believe that three to four companies may be indicted in the next few months. The Justice Department is unable provide further information developed during its investigations until indictments are handed down.

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Chairman BEVILL. How are the bids reviewed to eliminate collusion on the part of the bidders?

Secretary DAWSON. Collusion on the part of bidders is difficult to detect by reviewing bids. The Antitrust Divison of the Justice Department is presently assisting the Corps by sharing the knowledge they have obtained as to how bid rigging has occurred in past cases and suggested methods for detecting bid rigging. Bid rigging can be detected if a pattern "bid rotation" occurs where a certain group of contractors appear to be allocating Corps contracts in a specific area among themselves. Bid rigging can also be detected if a pattern appears of low bidders alleging mistakes in bid and become subcontractors to the second low bidder who has received award of the contract at a higher price. The Department of Defense Inspector General, DOD IG, has prepared a helpful booklet called "Indicators of Fraud in Department Procurement" which contains several indicators of bid rigging arising from other sources of information.

Chairman BEVILL. Do you compare notes with other agencies on ways to eliminate fraud of this type?

Secretary DAWSON. Bid rigging and other types of fraud arising from Corps activites are reported to the DOD IG through the Army Criminal Investigation Command, CID. The DOD IG shares the "lessons learned" with other elements of DOD and any other agency directly affected by particular cases. The Corps does contact other agencies whenever any of their contracts may be affected by particular bid rigging schemes or other types of fraud.

ITEMS INCLUDED IN FY 1986 APPROPRIATION ACT

Mr. BEVILL. The Committee is aware that you have directed the Corps not to fund several projects that we included in the FY 1986 Appropriation Act. The President sent me a letter after he signed our bill and thanked us for a good bill. Why are you not funding projects that we told you to proceed with? For example, on page 15 of your statement you propose a new program providing for cooperative efforts with foreign governments yet studies and projects added by Congress are not being funded.

Mr. DAWSON. We are complying with everything in the Act, and have complied with the vast majority of report language. This includes those studies and projects cited in the conference report to be undertaken within available funds. However, because of the shortfall, we have not funded those activities which are either normally done by local interests or which are responsive to lower priority outputs. The new line item to which you refer was added to assure that the Subcommittee is kept apprised of those activities in which it had previously indicated an oversight interest. Our problem has been to stretch the appropriated funds to cover as many of the unbudgeted and unplanned activities as we can.

LAKE MICHIGAN SHORE

Mr. BEVILL. The FY 1986 Continuing Resolution authorizes the Corps to accomplish emergency bank stabilization and other needed work along the Lake Michigan shore. As you know, our colleague Rep. Sid Yates of Illinois is vitally concerned about this problem. I understand that although the Continuing Resolution was signed into law December 19, 1985, no action has been taken to correct this serious problem.

Can you explain the delay in implementing the law as contained in the Continuing Resolution?

Mr. DAWSON. The Corps initiated a study in January 1986 to identify problem areas, and the magnitude of the problems and potential solutions. A report which will present a recommended course of action is scheduled to be completed by the Chicago District in mid-March. Based on the favorable results of the initial assessment, construction could be initiated in this fiscal year.

CORPS MANPOWER

Congressman BEVILL. Does the Corps have enough personnel to handle the additional workload resulting from the approval of the new construction starts for 1986 and those proposed for 1987?

General HEIBERG. The new construction starts have increased workload for the planning, engineering and construction management fundctions. The need for increased manpower in these functions will be offset by savings from increased contracting and efficiencies. We are studying alternative ways to accomplish both commercial-type and noncommercial-type activities in order to determine which ways

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are best. We Expect our studies to result in increased contracting with private industry to accomplish commercial-type activities at a lower cost, and increased efficiency in in-house ways to accomplish activities not contracted.

Congressman BEVILL. Have you been able to continue your work effectively and still absorb the reductions?

General HEIBERG. Yes, sir, we feel our program is being effectively executed with the current work force. The Corps manpower ceiling for the fiscal year 1986 Civil Works program is 28,395 manyears. This is a reduction of 250 from our fiscal year 1985 ceiling of 28,645. This reduction is being absorbed by increased contracting and in-house efficiencies.

OBLIGATIONS CEILING FOR CONSTRUCTION

Mr. BEVILL. What would be the impact of obligation ceilings anticipated by the Senate authorizing legislation?

Mr. DAWSON. Some sort of cap on the Civil Works Construction Program could be a useful management device for the Congress, particularly in trying to reduce the budget deficit. First, it would allow the orderly programming of the construction activity and, in so doing, provide an indirect control for budgeting planning and advance engineering and design as well. In addition, the cap would make it clear to everyone that projects ultimately must compete with one another for limited budgetary resources. Consequently, at the project planning level, these are desirable results in impressing upon all including the would-be local sponsors of the limited availability of Federal resources.

ADEQUACY OF BUDGET REQUEST

Mr. BEVILL. The FY 1987 budget reflects a 14% increase in the Corps FY 1986 appropriation level.

Is the FY 1987 appropriation request sufficient to maintain an economic rate of construction of ongoing projects?

Mr. DAWSON. Yes, the FY 1987 funding for continuing construction projects is based on current schedules proposed work phasing and cost sharing agreements for 40 of the construction starts approved for implementation in the FY 1985 Supplemental Appropriations Act. I might add that the reason is FY 87 budget appears 14% higher is that the FY 1986 appropriations did not include follow-on funding for the FY 1985 construction starts; this amounts to $230 million in the FY 1987 budget.

Mr. BEVILL. Is the O&M request sufficient to assure proper maintenance of completed projects?

Mr. DAWSON. The program request will provide sufficient funds for the continued operation and maintenance of our projects and for the rehabilitation of those older structures which warrant major repairs. We also are proposing to again increase the number of waterway segments in caretaker status from three to six. The commercial tonnage does not justify the continuation of regular operation and maintenance activities.

Mr. BEVILL. Are there any areas of your budget request where you feel the budget will not enable you to carry out an efficient and economic program?

Mr. DAWSON. No, Mr. Chairman, I feel that, given the concerns over the budget deficits, we have a really good program. I think there is agreement that the sponsors and beneficiaries must increase their contributions. And this budget provides a more realistic balance between appropriations from the General Treasury funds and funds from non-Federal interests.

Mr. BEVILL. In your view, what other problems face the Corps' Civil Works program?

Mr. DAWSON. There is a real need for follow-on action by the authorizing committees. Administration support for initiation of new construction starts was contingent upon passage of a bill which would generate added means to help cover harbor maintenance and construction of improvements to the Inland Waterways. And twelve of the 19 new starts require authorization before implementation of the projects can be initiated. More fundamentally, we need the new long-term charter that new authorization legislation will provide to guide our program planning for years to come.

FLOOD CONTROL AND COASTAL EMERGENCIES

Chairman BEVILL. What is the current status of the Emergency Fund?

General HEIBERG. The status of the PL 84-99 Emergency Fund as of January 31, 1986, is as follows:

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	Millions
Balance as of October 1, 1985	$24.6
FY 86 Appropriation	25.0
Revocations (October 1, 1985–January 31, 1986)	1.2
Sub total	50.8
Allocations (October 1, 1985–January 31, 1986)	12.7
Balance as of January 31, 1986	38.1

The current balance in the Emergency Fund will meet identified requirements and will allow for response to flood problems. However, water levels remain high in many California rivers and the full extent of damages to projects is not known. The spring flood season is still ahead and the extent of flooding could vary from moderate to severe. If severe flooding occurs and the Emergency Fund is exhausted, funds can be reprogrammed from other appropriations to meet immediate needs. When the total requirements for the fiscal year are identified, a supplemental request could be considered.

PERSONNEL COSTS

Congressman BEVILL. Provide for the record, by appropriation account, the funds requested for Fiscal Year 1987 for personnel related costs.

General HEIBERG. Funds requested for personnel related costs in Fiscal Year 1987 are as follows:

Appropriation account	*Dollars*
General Investigations	73,970,000
Construction, General	186,592,000
Operation and Maintenance, General	408,080,000
General Expenses	72,130,000
Flood Control, MR&T	77,278,000
Flood Control and Coastal Emergencies	6,440,000
Permanent Appropriations (Maintenance and Operations of Dams and Other Improvement of Navigable Waters)	355,000
Revolving Fund	11,625,000
Total	836,470,000

STATUS OF WORK FOR OTHER FEDERAL AGENCIES

Mr. BEVILL. What is the status of the work the Corps is doing for the Federal agencies?

General HEIBERG. During fiscal year 1986 we expect to provide about 900 man-years of support to other Federal agencies. This represents slightly over 3 percent of our civil works manpower. Over 50 percent of that support is provided to the Environmental Protection Agency. The Corps provides construction inspection for EPA on its Construction Grants Program (wastewater treatment) and is EPA's design and construction agent for Federal lead Superfund projects. About 15 percent of our total support is provided to the Federal Emergency Management Agency. Support to FEMA includes flood insurance and flood plain management studies, emergency response actions, and prototype design and construction on the Key Worker Blast Shelter Program. For the Department of Energy we are providing a wide variety of defense and civil related support. This includes assistance to DOE's Chicago Operations Office of its Civilian Radioactive Waste Management Program, assistance to DOE's Nevada, Albuquerque, and Savannah River Operations Office and Los Alamos National Laboratories on defense programs and assistance to the Federal Energy Regulatory Commission and the Bonneville Power Administration. The defense related work for DOE is currently charged to our military manpower account. The remainder of our support is provided to some twenty other Federal agencies including those within the Department of State, Interior, Justice and Transportation and the U.S. Information Agency/Voice of America. All Corps costs incurred in providing support are reimbursed by the other agency.

There are two primary reasons why we support other agencies. First, our assistance helps us maintain the engineering and construction strengths necessary to carry out our assigned civil and military missions including being capable of responding to national defense or national disaster mobilization requirements. Our support to others enhances rather than detracts from our ability to be responsive to our assigned civil and military missions. Second, our support to others increases

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government efficiency by permitting the other agency to concentrate on its program mission without concentrating on building a design and construction staff. Since we already have the expertise and organization in place we believe that considerable duplication is avoided. Supporting other agencies helps us moderate fluctuations in our assigned civil and military workload.

FY 1985 COMPLETIONS

Mr. BEVILL. Prepare for the record a list comparing projects actually completed in 1985 with a comparable list appearing in last year's hearings.

General HEIBERG. Yes, sir.

[The information follows:]

ADVANCE ENGINEERING AND DESIGN PROJECTS TO BE COMPLETED WITH FISCAL YEAR 1985 APPROPRIATIONS

Beach Erosion:	
1. Reno Beach, Oh	Completed
Flood Control:	
1. Chaska, MN	Completed
2. Harris Fork Creek, TN & KY	Completed
Multiple Purpose Power:	
1. Town Bluff Hydropower, TX	Completed

CONTINUING CONSTRUCTION PROJECTS TO BE COMPLETED WITH FISCAL YEAR 1985 APPROPRIATIONS

Beach Erosion:	
1. Imperial Beach, CA	Completed
Flood Control:	
1. Cucamonga Creek, CA	Completed
2. McGee Creek Drainage and Levee District, IL.	Completed
3. Coralville Lake, IA	Completed
4. Little Sioux River, IA	Completed
5. Waterloo, IA	Completed
6. El Dorado Lake, KS	Completed
7. Big Stone Lake and Whetstone River, MN & SD.	Completed
8. Winona, MN	Completed
9. Grapevine Lake, TX (Rehab)	Completed
Multiple Purpose Power:	
1. Dworshak Dam and Reservoir, ID	Completed
Navigation:	
1. Barbers Point Harbor, HI	Completed
2. Lockport Lock (Rehab), IL	Completed
3. Red River Emergency Bank Protection, LA, AR, OK, & TX.	Congressional add in FY86
4. Ocean City Harbor & Inlet & Sinepuxent Bay (Rehab), MD.	Completed
5. Irondequoit Bay, NY	Completed
6. Emsworth Locks and Dams, Ohio River (Rehab), PA.	Completed
7. Cooper River, Charleston Harbor, SC	Completed
8. Lake Washington Ship Canal (Rehab), WA	Completed

FISCAL YEAR 1986-87 SCHEDULED COMPLETIONS

Mr. BEVILL. Insert in the record a new list of planning and construction projects to be completed in 1986 and 1987.

General HEIBERG. Yes, sir.

[The information follows:]

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ADVANCE ENGINEERING AND DESIGN PROJECTS TO BE COMPLETED WITH FISCAL YEAR 1986 APPROPRIATIONS

Flood Control:
1. Mississippi Delta Region, LA
2. Francis E. Walter Dam (Modification), PA

Flood Damage Prevention:
1. St. Francis Below Wappapello (Comprehensive), AR & MO

CONTINUING CONSTRUCTION PROJECTS TO BE COMPLETED WITH FISCAL YEAR 1986 APPROPRIATIONS

Flood Control:
1. Lytle and Warm Creeks, CA
2. Milan, IL
3. Little Blue River Channel, MO
4. Point Place, OH
5. Wyoming Valley, PA
6. Red River Levees and Bank Stabilization Below Denison Dam, TX, AR, & LA
7. Mill Creek Lake, WA (Rehab)

Multiple Purpose:
1. John Day Lock and Dam, Lake Umatilla, OR & WA

Navigation:
1. Santa Cruz Harbor, CA
2. Tampa Harbor—Main Channel, FL
3. Kaskaskia River Navigation, IL
4. Red River Emergency Bank Protection, LA, AR, OK, & TX
5. Siuslaw River and Bar, OR

ADVANCE ENGINEERING AND DESIGN PROJECTS TO BE COMPLETED WITH FISCAL YEAR 1987 APPROPRIATIONS

Flood Control:
1. East Grand Forks, MN
2. Twin Valley Lake, Wild Rice River, MN
3. Hannibal, MO
4. Sheyenne River, ND
5. Rio Grande Floodway—Truth or Consequences Unit, NM

Navigation:
1. Bristol Harbor, RI

CONTINUING CONSTRUCTION PROJECTS TO BE COMPLETED WITH FISCAL YEAR 1987 APPROPRIATIONS

Beach Erosion:
1. Tybee Island, GA

Flood Control:
1. Bettendorf, IA
2. Mauvaise Terre Drainage & Levee District, IL
3. Jemez Canyon Dam, NM (Dam Safety Assurance)

Navigation:
1. Fisherman's Wharf Area, CA
2. Port Hueneme Harbor, CA
3. Delaware River in the Vicinity of Camden, NJ

FISCAL YEAR 1985 CORPS REVENUES

Mr. BEVILL. Provide for the record a list showing total revenues generated by Corps projects and programs in fiscal year 1985 indicating where the funds are deposited and how they are used.

General HEIBERG. We will provide that list. All such revenues were returned to the Treasury, and were available to the Corps as offsetting receipts or appropriations in fiscal year 1985 or future years, unless otherwise noted.

[The information follows:]

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FISCAL YEAR 1985 REVENUES GENERATED BY CORPS CIVIL WORKS PROJECTS AND RETURNED TO THE TREASURY

Headwater benefits [1] [4]	$5,730,728
Allocated by power marketing agencies [2] [7]	380,393,033
Miscellaneous fees by regulatory and judicial services [7]	1,210,719
Fines, penalties, forfeitures (commerce and antitrust laws) [7]	15,150
Forfeitures of unclaimed money and property [7]	269
Other fines, penalties and forfeitures [7]	154,105
General Fund Proprietary Interest, NOC	7,786,581
General Fund Proprietary Receipts, All Other, NOC	16,841,477
Special Recreation Use Fees [5]	11,539,444
Hydraulic Mining, California-tax debris reservoirs [1]	48,000
Hydraulic Mining, California water storage and use of facilities	100,000
Lease of land required for flood control, navigation and allied purposes [1]	7,285,775
Other receipts less than $1,000 [6]	153
Inland Waterways Trust fund [7] [8]	62,686,121
Gross total revenues, fiscal year 1985	493,791,555
Budget clearing account	+2,488,622
Net total revenues, fiscal year 1985	496,280,177

[1] Permanent Appropriation, Warranted to Corps the year following collection.
[2] Revenues for power generation include only those amounts that marketing agencies have allocated to Corps projects.
[3] This amount is 75 percent of funds collected and is returned to States in lieu of taxes.
[4] Is appropriated to the Corps under the title Maintenance and Operation of dams.
[5] This amount plus Special Recreation Use Fees Collections unappropriated from prior years are included in $12,000,000 warranted to the Corps in FY 1986 for Operation and Maintenance of Recreation areas.
[6] Available to be appropriated.
[7] Is not available to be appropriated and does not account as an offsetting receipt.
[8] Includes $24,091,121 interest on investments.

NOC—Not Otherwise Classified.

FLOOD DAMAGE REPORT

Mr. BEVILL. Provide for the record the annual flood damage report.
General HEIBERG. Yes, sir.
[The information follows:]

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Annual Flood Damage Report

1. Damages Prevented. During FY 85 Corps of Engineers dams, levees, and flood protection projects functioned well and prevented $10.8 billion in flood damages. This is near the 10-year (1974-1984) average of $10.0 billion. The record year occurred in FY 83 when $23.2 billion in flood damages were prevented. Through FY 85, total flood damages prevented by all Corps flood control projects is $157 billion. Estimates of damages prevented are not adjusted for inflation. Table 1 shows the FY 85 flood damages averted by Corps structures on a state-by-state-basis. The "Annual Report of the Chief of Engineers on Civil Works Activities" presents information on flood damages prevented by permanent structures by Corps districts and water resources region. Damages associated with hurricanes "Isabel" and "Juan" in October and hurricane "Kate" in November 1985 are not included in FY 85 accounting. However, if the first 2 months are indicative of the year, FY 86 could be a record year.

In FY 85, Corps projects were particularly effective in Indiana, Illinois, Ohio, Louisiana, and Mississippi. For example, in the Wabash River Basin in late February and early March, serious flooding occurred in the vicinity of Lafayette, Indiana. Without Corps lakes and local protection projects, flooding would have caused about $130 million in damages. The projects limited the damages to about $20 million. The floodwall at Vincennes, Indiana, alone prevented $50 million in damages. The same storm system produced record and near record stages on the Illinois River and record stages on the Mississippi for the month of February at Chester and Thebes, Illinois. Once again projects protecting the Lower Mississippi River Valley worked well in preventing over $9.5 billion in damages.

In FY 85, the Corps responded to flood problems on the Mississippi River mainstem and tributaries (February and March 1985) and across the Midwest from the Lower Great Lakes to the Ohio River Valley (January - May 1985). The Corps provided technical assistance, flood fighting equipment and materials to Federal, state, and local entities. This included initiation of several advance measure projects in response to record lake elevations for several of the Great Lakes.

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On September 19th, a major earthquake rocked Mexico City, causing widespread damage and burying thousands of people. The Corps of Engineers was asked to provide two types of advisory assistance to the earthquake recovery effort. The first was advice in the use of construction equipment and the second was geotechnical evaluations. With respect to the construction effort, the Corps of Engineers was represented on damage assessment teams organized under the direction of the Secretary of State. The teams assessed the requirements for rubble removal, demolition of damaged structures, and the need for additional US Government resources. In addition to the construction advice, the Corps of Engineers participated on a US National Academy of Sciences Team evaluating the overall impacts of the earthquake.

2. Flood Damages Incurred. Total flood damages sustained in FY 85 were less than $500 million, considerably less than the 10-year average (1975-1984) of $2.1 billion. This represents the lowest amount of damages incurred since 1971. Damage estimates are not adjusted for inflation. The estimated flood related fatalities were 70 during FY 85, well below the national average of about 200. The downward trend in fatalities continues with this year being the lowest death toll since 1968. Flash floods accounted for over 90 percent of the death toll.

Several major flood events occurred during FY 85. The first took place in the Nation's mid-section and northern Texas in April. Frequent heavy thunderstorms drenched the area, causing an estimated $200 million in damages and 12 fatalities. Three weeks of warm weather in late February and early March led to record floods throughout the upper Midwest. Snowmelt runoff, coupled with heavy rains and above normal temperatures, triggered record and major flooding in Indiana, Illinois, southeast Kansas, eastern Oklahoma, lower Michigan and west central Missouri. Thousands of people were evacuated, but only six deaths occurred. Damages were in excess of $100 million. Intense thunderstorms in April 1985 over parts of north and south Texas produced heavy rains and flooding. Nine deaths and damages in excess of $5 million were attributed to the storms. In August record rainfall and hail over Cheyenne, Wyoming, triggered severe flash flooding. This resulted in 12 deaths and damages estimated near $40 million.

3. Other Events. During the FY 85 tornado season, 1,098 tornadoes were reported, with property damages just under $1 billion and deaths totaling 95. The most notable event occurred on May 31. It was the most devastating outbreak of tornadoes since April 3-4, 1974, and occurred in two separate areas. One occurred between Lake Ontario and Georgian Bay in Canada and the other in extreme northeast Ohio and northwest Pennsylvania. The storm produced 41 tornadoes, causing 75 deaths, 850 injuries in the United States alone, and damages in excess of $100 million. On April 5, a long

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line of thunderstorms over the Mississippi Valley produced 21 tornadoes and severe weather, with hail and damaging lightning. The storm's major impact came from widespread, damaging winds from Indiana and Ohio in the North, to Alabama and Georgia in the South. Damages were in excess of $50 million. On the afternoon of June 8, a thunderstorm complex spawned two tornadoes over northwest Wisconsin producing over $9.95 million in damages.

Eleven named tropical cyclones occurred during FY 85. Four were tropical storms and seven reached hurricane strength. This is one hurricane more than the annual average. "Danny" and "Elena" were among the most notable hurricanes this season. "Danny" moved over Louisiana on August 15, causing three deaths and $50 million in damages. "Elena" made landfall near Biloxi, Mississippi, on the morning of September 2. More than 1,500,000 people were evacuated from low-lying coastal areas of the Middle Gulf Coast during the approach of "Elena." This is the largest number of people ever evacuated. Because of the changing threat of the storm about 500,000 people evacuated twice. No lives were lost in the area of landfall because of the evacuation, but four deaths were reported due to falling trees, automobile accidents, and heart attacks. Insured losses from "Elena" ranked as the fourth largest on record, with a total of $543 million reported by the American Insurance Services Group. Total economic losses due to "Elena" from Sarasota, Florida, to Grand Island, Louisiana, exceeded $1.0 billion. Hurricane "Gloria" struck the outer banks of North Carolina early on September 27 and then moved over Long Island into New England later the same day, causing 11 deaths and damages totaling $900 million. Flood damages from tropical disturbances that occurred in October and November after the end of the fiscal year will be included in the FY 86 Report.

A bitter cold, arctic air mass moved across the Eastern United States January 19-24 setting all time minimum temperature records. At least 86 deaths were attributed to the cold weather, which also produced extensive damage to fruit crops in the South. In Florida, 20 sinkholes developed in the Dover area after heavy pumping for frost protection temporarily lowered groundwater levels 19 feet on January 22. Damages were in excess of $300,000 in this area alone, and in excess of $100 million throughout the East.

Beginning in the fall of 1984 below normal precipitation plagued the East. In January, a drought warning was issued by the Delaware River Basin Commission as groundwater levels were on a downward trend and storage in the Delaware River reservoir system was below normal. By April, much of the East was considered to be in a drought. The heavily-populated Northeast and Mid-Atlantic regions received less than 25 percent of normal rainfall and record low streamflows were established in much of the southern New England area, Florida, North Carolina, South Carolina, and Georgia.

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Water supply capacity in the Northeast and Mid-Atlantic reservoirs was between 30 and 50 percent of normal. Drought emergencies were in effect for New York City and eastern Pennsylvania. By the end of April, about 21 million people were affected by the drought, with over 375,000 acres burned as a result of forest fires throughout Florida, North Carolina, South Carolina, Virginia, and Tennessee. During May, rains in the Northeast benefited crops and topsoil moisture supplies. However, water supplies were still far below normal and drought emergencies continued to exist.

Water rationing was in effect in New York City and in 94 communities in New Jersey by mid-May. Mandatory water restrictions were also placed in effect in eight southwest counties in Florida. Some rains occurred in June and July, but there was very little improvement to reservoirs throughout the Northeast corridor. Near the end of September, the rains from hurricanes "Elena," "Danny," and "Gloria" brought temporary relief from below-normal streamflow to much of the East. Drought restrictions were lifted in northeast New Jersey, but a drought emergency continued for the Delaware River Basin.

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TABLE 1

FY 1985

Flood Damages Prevented by Corps Projects

STATE	$000	STATE	$000
Alabama	0	Montana	555
Alaska	6,846	Nebraska	1,082
Arizona	14,300	Nevada	0
Arkansas	265,510	New Hampshire	0
California	72,800	New Jersey	135
Colorado	440	New Mexico	119,648
Connecticut	250	New York	15,158
Delaware	0	North Carolina	14,220
Florida	2,079	North Dakota	53
Georgia	811	Ohio	113,279
Hawaii	0	Oklahoma	56,900
Idaho	338	Oregon	28,013
Illinois	75,446	Pennsylvania	24,387
Indiana	117,822	Rhode Island	175
Iowa	17,060	South Carolina	796
Kansas	26,722	South Dakota	511
Kentucky	9,976	Tennessee	43
Louisiana	8,463,296	Texas	46,346
Maine	0	Utah	2,200
Maryland	1,404	Vermont	535
Massachusetts	304	Virginia	3,265
Michigan	15,197	Washington	65,444
Minnesota	2 861	West Virginia	9,088
Mississippi	1,072,098	Wisonsin	11
Missouri	100,086	Wyoming	0

Total FY 1985 flood damages prevented in thousands of dollars, $10,768,210

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TABLE 2

FY 1985

Flood Damages Prevented by Corps Supported Emergency Operations

STATE	$000	STATE	$000
Alabama	0	Montana	535
Alaska	0	Nebraska	$
Arizona	$	Nevada	0
Arkansas	639	New Hampshire	0
California	0	New Jersey	0
Colorado	5,500	New Mexico	300
Connecticut	0	New York	5
Delaware	0	North Carolina	$
Florida	0	North Dakota	0
Georgia	0	Ohio	10
Hawaii	0	Oklahoma	0
Idaho	10,597	Oregon	0
Illinois	0	Pennsylvania	0
Indiana	7,000	Rhode Island	0
Iowa	20	South Carolina	80
Kansas	0	South Dakota	5
Kentucky	0	Tennessee	0
Louisiana	0	Texas	0
Maine	0	Utah	0
Maryland	0	Vermont	0
Massachusetts	0	Virginia	0
Michigan	0	Washington	805
Minnesota	5,300	West Virginia	0
Mississippi	0	Wisonsin	0
Missouri	20	Wyoming	0

$ - Amount of flood damage prevented unknown

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TABLE 3

FY 1985
Total Flood Damages Prevented by Corps of Engineers
(Tables 1 & 2)

STATE	$000	STATE	$000
Alabama	0	Montana	1,090
Alaska	6,846	Nebraska	1,082
Arizona	14,300	Nevada	0
Arkansas	266,149	New Hampshire	0
California	72,800	New Jersey	135
Colorado	5,940	New Mexico	119,948
Connecticut	250	New York	15,163
Delaware	0	North Carolina	14,220
Florida	2,079	North Dakota	53
Georgia	811	Ohio	113,289
Hawaii	0	Oklahoma	56,900
Idaho	10,935	Oregon	28,013
Illinois	75,446	Pennsylvania	24,387
Indiana	124,822	Rhode Island	175
Iowa	17,080	South Carolina	876
Kansas	26,722	South Dakota	516
Kentucky	9,976	Tennessee	43
Louisiana	8,463,296	Texas	46,346
Maine	0	Utah	2,200
Maryland	1,404	Vermont	535
Massachusetts	304	Virginia	3,265
Michigan	15,197	Washington	66,249
Minnesota	8,161	West Virginia	9,088
Mississippi	1,072,098	Wisconsin	11
Missouri	100,106	Wyoming	0

Total FY 1985 flood damages prevented in thousands of dollars, $10,799,026

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Table 4
Flood Damages Incurred
FY 1985

State	Property ($000)	Acres Inundated (Thousands of Acres)	Lives Lost
Alabama	1,700+		
Alaska	50+		1
Arizona	1,350+		1
Arkansas	19,823		3
California	*		1
Colorado	7,000+		
Connecticut	*		
Delaware	50+		
Florida	30,000+		
Georgia	*		
Hawaii	3,100+		
Idaho	*		
Illinois	11,500+		6
Indiana	50,000		
Iowa	50+	1,000+	
Kansas	5,000		
Kentucky	460+		4
Louisiana	8,050+		1
Maine	45+		
Maryland	50+		
Massachusetts	*		
Michigan	80,000		
Minnesota	500+		
Mississippi	2,000+	1,000+	
Missouri	100+		4
Montana	*		
Nebraska	500+	1,000+	
Nevada	*		
New Hampshire	50+		
New Jersey	*		
New Mexico	24,000+		
New York (ALB)	24,700+		
North Carolina	50+		
North Dakota	*		
Ohio	10,000+		
Oklahoma	15,030+	40+	9
Oregon	50+	182+	
Pennsylvania	100+		1
Rhode Island	*		
South Carolina	100+		
South Dakota	55+		
Tennessee	1,550+		
Texas	38,650+	1,000+	23
Utah	*		
Vermont	*		
Virginia	290+		
Washington	*		
West Virginia	1,050+		

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Wisconsin	2,300+	
Wyoming	40,000	12
Puerto Rico	52,500+	2
Virgin Islands	10,000+	

TOTAL: FY 1985
DEATHS - 70
Monetary Losses - near one half billion dollars

*Property damages unavailable but flooding occurred

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Table 5
Annual Tornado Losses
FY 1985

State	Damages Incurred (1,000 Dollars)	No. of Tornadoes	Lives Lost
Alabama	6815	71	1
Alaska	*		
Arizona	50	3	0
Arkansas	3,100	34	0
California	55	4	0
Colorado	450	26	0
Connecticut	*	4	0
Delaware	0	0	0
Florida	22,605	86	2
Georgia	1,555	10	0
Hawaii	0	0	0
Idaho	5	2	0
Illinois	3,605	28	1
Indiana	150	10	0
Iowa	10,400	31	3
Kansas	6,567	52	0
Kentucky	5,100	3	0
Louisiana	*	30	0
Maine	0	0	0
Maryland	*	2	0
Massachusetts	*	4	0
Michigan	520	19	1
Minnesota	5,055	53	0
Mississippi	1,705	36	0
Missouri	*	37	2
Montana	*	8	0
Nebraska	15,850	73	0
Nevada	0	0	0
New Hampshire	0	0	0
New Jersey	*	2	0
New Mexico			
New York (ALB)	*	5	0
North Carolina	2,000	23	0
North Dakota	650	24	0
Ohio	60,075	28	11
Oklahoma	10,342	54	0
Oregon	0	2	0
Pennsylvania	2295	30	64
Rhode Island	0	0	0
South Carolina	700	14	0
South Dakota			
Tennessee			
Texas	41,650	141	5
Utah	0	0	0
Vermont	0	0	0
Virginia	*	6	0
Washington	0	0	0
West Virginia	*	4	0

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Wisconsin	26,255	37	4
Wyoming	75	10	0

TOTAL: FY 1985
DEATHS - 95
EVENTS - 1,098
Monetary Losses - under $1 billion

*Estimates unavailable

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STATUS OF ENVIRONMENTAL IMPACT STATEMENTS

Mr. BEVILL. Prepared for the record a status of environmental impact statements like the table shown in the 1986 hearings.

General HEIBERG. We will provide that for the record.

[The information follows:]

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BUDGETED STATUS OF EIS---LAND ACQUISITION, CONSTRUCTION AND REHABILITATION, FISCAL YEAR 1987

Project	Date filed with CEQ/EPA Draft	Date filed with CEQ/EPA Final	Scheduled filing plan Draft	Scheduled filing plan Final	Remarks
LOWER MISSISSIPPI VALLEY					
East St. Louis and Vicinity, IL:					
Blue Waters Ditch Area. . . .	Apr 3, 1975. . . .	Jul 24, 1978			
Cohokia-Harding Area.					Final EIS not scheduled for submission pending a decision to initate construction.
Grand Isle.		Oct 8, 1976			Supplement scheduled 1st qtr, FY 87
Kaskaskia Island Drainage and Levee District, IL	Apr 8, 1977. . . .	Apr 28, 1978			Supplement submitted on July 26, 1979.
Kaskaskia River, IL	May 6, 1974. . . .	Mar 12, 1976			Supplement submitted to EPA on Aug 26, 1983.
Lake Pontchartrain and. . . . Vicinity, LA	Aug 17, 1972. . . .	Jan 17, 1975			Draft Revised EIS for High Level Plan filed with EPA on Dec 16, 1983. Final revised EIS filed with EPA Dec 7, 1984.
Larose to Golden Meadow, LA . .	Oct 3, 1972. . . .	May 13, 1974			Draft Supplement submitted to EPA on June 29, 1984. Final Supplement scheduled for submission to EPA in the Feb 20, 85. A Final Supplement on mitigation is scheduled for submission to EPA in the 2nd Qtr FY 86.
Lock and Dam 26, Mississippi. . River, Aton IL and MO	Mar 15, 1974. . . .	Sep 8, 1976			
L&D 26, Second Lock			3rd Qtr FY 86 . .	2nd Qtr FY 87	
Mauvaise Terre.				3rd Qtr FY 86	
Mississippi River, Baton Rouge. to the Gulf of Mexico LA	Mar 7, 1973. . . .	Jul 19, 1974			A supplement to the Final EIS was filed on Mar 19, 1976. Final Supplement scheduled for submission to EPA on Feb 22, 1985. Record of Decision signed on May 15, 1985.
Mississippi River, Gulf . . . . Outlet, LA	May 16, 1975. . . .	May 21, 1976			Draft EIS on Shiplock scheduled 4th Qtr FY 85. Final EIS on Shiplock scheduled 3rd Qtr FY 87.
Mississippi River between . . . the Ohio and Missouri River (Regulating Works), IL and MO	Jun 13, 1975. . . .	Apr 23, 1976			

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BUDGETED STATUS OF EIS---LAND ACQUISITION, CONSTRUCTION AND REHABILITATION, FISCAL YEAR 1987

Project	Date filed with CEQ/EPA Draft	Final	Scheduled filing plan Draft	Final	Remarks
LOWER MISSISSIPPI VALLEY (cont'd)					
Mississippi River, Ship Channel		Jul 2, 1982			A supplement was filed in Jul 83. A similar Report was filed in Sep 83. Two other supplements were filed in Aug 85, respectively. Another supplement scheduled for submission in the 2nd qtr of FY 86.
Morgan City and Vicinity, LA:					
Franklin Area		May 31, 1973			
Morgan City Area					
New Orleans to Venice, LA	Oct 3, 1972	Jan 24, 1975	Mar 23, 1984	Apr 12, 1985	Supplement for East Barrier Unit scheduled for 1st qtr FY 88.
Ouachita and Black Rivers, AR and LA	Mar 22, 1974	Dec 23, 1974			Draft Supplement submitted Apr 26, 1984. Final Supplement scheduled for submission in 3rd qtr FY 86.
Pearl River, Slidell				1st Qtr FY 87	The Record of Decision was signed by the Division Engineer on 18 May 84.
Red River Levees and Bank Stabilization Below Denison Dam, TX, AR and LA	May 11, 1983				
Red River Waterway, Mississippi River to Shreveport, LA	Jan 10, 1973	May 11, 1973			Final Supplement No. 1 filed Feb 25, 1977. A Second Supplement was submitted to EPA on Nov 10, 1983.

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BUDGETED STATUS OF EIS---LAND ACQUISITION, CONSTRUCTION AND REHABILITATION, FISCAL YEAR 1987

Project	Date filed with CEQ/EPA: Draft	Date filed with CEQ/EPA: Final	Scheduled filing plan: Draft	Scheduled filing plan: Final	Remarks
MISSISSIPPI RIVER COMMISSION					
Atchafalaya Basin, LA	Jun 1981	Aug 20, 1982			
Boyou Cocodrie and Tributaries, LA			Dec 1986	Sep 1987	
Channel Improvement	Sep 30, 1974	Apr 16, 1976			
Old River, LA					No EIs required. (Included in EIS for Atchafalaya Basin, LA)
St. Francis Basin, AR and MO.	Feb 7, 1973	Dec 11, 1973			
Tensas Basin, AR and MO:					
Boeuf and Tensas Rivers	Oct 13, 1981	May 8, 1984			
Sicily Island	Jun 29, 1978	May 14, 1982			
Below Red River	Mar 11, 1980	Oct 30, 1981			
Lake Chicot Pumping Pland	Sep 24, 1973	Aug 29, 1975			
Tensas-Cocodrie Pumping Plant	May 28, 1976	Sep 24, 1976			
West Tennessee Tributaries, TN.	Aug 19, 1974	Jul 21, 1975			Draft supplement, May 1982. Final supplement, Feb 9, 1983.
Yazoo Basins, MS:					
Sardis Lake	Dec 16, 1977	Feb 20, 1979			
Arkabutla Lake	Dec 16, 1977	Feb 20, 1979			
Enid Lake	Dec 16, 1977	Feb 20, 1979			
Grenada Lake	Dec 16, 1977	Feb 20, 1979			
Greenwood	Jan 24, 1975	Jan 16, 1976			
Upper Yazoo Projects	Jan 24, 1975	Jan 16, 1976			
Main Stem	Jan 24, 1975	Jan 16, 1976			
Tributaries:					
All work except Ascalmore-Tippo and Opossum Bayous	Jan 24, 1975	Jan 16, 1976			
Ascalmore-Tippo and Opossum Bayous	Aug 15, 1973	Jun 6, 1975			
Big Sunflower River, etc	Jan 24, 1975	Jan 16, 1976			
Yazoo Backwater	Jan 24, 1975	Jan 16, 1976			
Mississippi River Levees		Apr 16, 1976			
Sardis Dam (Dam Safety Assurance)					EA and FONSI completed in Apr 1985.

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BUDGETED STATUS OF EIS---LAND ACQUISITION, CONSTRUCTION AND REHABILITATION, FISCAL YEAR 1987

Project	Date filed with CEQ/EPA Draft	Final	Scheduled filing plan Draft	Final	Remarks
NORTH CENTRAL					
Ames Lake, IA	Dec 14, 1970	Dec 14, 1974	3rd Qtr FY 87	1st Qtr FY 88	
Bassett Creek, MN Supplement	Jul 10, 1978		1st Qrt FY 88	2nd Qtr FY 88	FONSI - Jan 20 1983.
Bettendorf, IA.	Jul 20, 1973.	Jul 10, 1974	Jun 26, 1981.	May 7, 1982.	
Des Moines Recreational River & Greenbelt, IA			3rd Qtr FY 87	1st Qtr FY 88	
Ellicott Creek, NY.	Sep 2, 1978	May 8, 1980			Supplement April 15, 1983.
Ill MM Brandon Road C&D, IL.		Dec 1, 1975			FONSI - March 31, 1983. Joliet Channel Wall FONSI - Feb 6, 1985.
		Feb 24, 1984 Velus unit			
Lake Darling, Souris River, ND.	Oct 29, 1982.		Aug 20, 1985.		For other project features
Mankato & N. Mankato, MN:		Apr 12, 1972			
Recreation and Development:					Mar 12, 1979 & Oct 3, 1980 Supplements.
Highway 169					Jan 2, 1981 & Aug 1, 1983 Supplements.
C & NWRR.					May 5, 1981 & Dec 16, 1983 Supplements.
Main Street					Jul 6, 1981 & Mar 21, 1983 Supplements.
Presque Isle Peninsula, Erie, PA.	Apr 2, 1971.	Feb 19, 1972			For 1954 & 1960 R&H Acts Environmental Assessment, Mar 1975, for 74 & 76 WRDA.
Rockford, IL.	Oct 11, 1974.	Jul 21, 1975			
South Quincy Drainage & Levee District, IL	Jul 1982.	Jul 8, 1983		4th Qtr FY 86	
Upper Mississippi River System. Environmental Management Program					NEPA compliance will be accomplished prior to implementation of specific project construction.
Cleveland Harbor, OH.		Nov 3, 1978			
Geneva-On-The-Lake, OH.	May 8, 1981.	Oct 9, 1981			Supplement Apr 29, 1985
Port Ontario Harbor, NY		Nov 9, 1979			
South Fork Zumbro River at. Rochester, MN	Jul 24, 1978.	May 9, 1979			

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BUDGETED STATUS OF EIS---LAND ACQUISITION, CONSTRUCTION AND REHABILITATION, FISCAL YEAR 1987

Project	Date filed with CEQ/EPA Draft	Final	Scheduled filing plan Draft	Final	Remarks
SOUTHWESTERN					
Arcadia Lake, OK	Aug 9, 1977	Nov 8, 1977			Sec 404 Evaluation Report signed by District Engr May 4, 1977.
Buffalo Bayou and Tributaries, TX Addicks and Barker Dams					Final Environmental Assessment to be complete in Mar 1986.
Clear Creek, TX	Dec 1981	Aug 13, 1982			Sec 404 Evaluation Report was included in EIS.
Colorado River and Trib, Boggy Creek at Austin, TX	Jun 30, 1980				Nationwide permit #26 issued on July 19, 1977 covers this project.
Cooper Lake and Channels, TX	Jun 24, 1977				Supplemental EIS filed with EPA in Mar 1981. Sec 404 Evaluation Report was included in Supplemental EIS.
Corpus Christi Ship Channel, TX	Feb 8, 1971	May 7, 1971			Final supplement covering disposal areas submitted to EPA on June 14, 1982.
El Paso, TX					
Central Area		Nov 9, 1970			
Northwest Area	Jan 31, 1974	Nov 7, 1977			
Southeast Area				Sep 1986	
Fourche Bayou in the Vicinity of Little Rock, AR	Mar 12, 1981				
Freeport Harbor, TX	Mar 2, 1979				Sec 404 Evaluation Report received Congressional approval in the FY 1981 Energy and Water Development Act.
Great Bend, KS	Apr 19, 1985			Mar 1986	
Halstead, KS	Mar 12, 1981				Supplemental Environmental Impact Report filed with EPA on April 26, 1985. Sec 404 submission scheduled for fourth qtr of FY 1986.
Jemez Canyon Dam, NM					Enviromental Assessment prepared.
Joe Pool Lake, TX	Dec 2, 1973				Sec 404 Evaluation Report signed by by District Engr Sep 23, 1977.
Lake Wichita, Holliday Creek at Wichita Falls, TX	Mar 5, 1981				Supplemental EIS sent to EPA in January 1986. Sec 404 Evaluation Report to be included in the Supplemental Environmental Information Report.

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BUDGETED STATUS OF EIS---LAND ACQUISITION, CONSTRUCTION AND REHABILITATION, FISCAL YEAR 1987

Project	Date filed with CEQ/EPA Draft	Final	Scheduled filing plan Draft	Final	Remarks
SOUTHWESTERN (cont'd)					
McClellan-Kerr Arkansas River Navigation System, AR & OK:					
Locks and Dams		Mar 6, 1975			For Little Rock District O&M.
		Jul 28, 1975			For Tulsa District O&M.
Mouth of Colorado River, TX					
Navigation Component		Aug 24, 1978			Sec 404 Evaluation Report was included in EIS.
Diversion Component		Dec 16, 1981			Sec 404 Evaluation Report was included in EIS.
Ray Roberts Lake		Mar 4, 1974			Supplement filed, Sep 18, 1975. Sec 404 Evaluation Report signed by District Engr, Sep 12, 1980.
San Antonio River Channel Improvement, TX		Nov 9, 1971			State 404 Certification issued, Sep 3, 1980 for Units 8-3, 8-4, and 8-5. Final supplemental EIS for Unit 8-3-2 was submitted to EPA Feb 13, 1981.
San Gabriel River, TX		Mar 27, 1972			Sec 404 Evaluation Report signed by District Engr, Oct 3, 1977. Supplemental EIS for South Fork Lake is scheduled - draft Jul 1986 and final to EPA in Feb 1987.
South Fork Lake, TX			Jun 1985	Sep 1985	
Taylors Bayou, TX	Aug 18, 1975				Supplemental filed, Jul 31, 1981. Sec 404 Evaluation Report signed by District Engr, Nov 14, 1980.
Townbluff Hydropower, TX					Final EIS approved 9 Sep 1983 Sec 404 Evaluation Report signed by District Engr 14 Feb 83.
Vince & Little Vince Bayous, TX	May 17, 1977	Feb 27, 1978			Environmental Assessment for Little Vince Bayou was submitted to EPA Jun 17, 1982.

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BUDGETED STATUS OF EIS---LAND ACQUISITION, CONSTRUCTION AND REHABILITATION, FISCAL YEAR 1987

Project	Date filed with CEQ/EPA Draft	Final	Scheduled filing plan Draft	Final	Remarks
MISSOURI RIVER					
Blue River Channel, Kansas, City, MO		Sep 8, 1975			
Brunswick-Dalton Drainage District (L-246)	Nov 30, 1971	Jan 18, 1973			
Chatfield Lake, CO.	Apr 16, 1974	Arp 3, 1975			Supplement filed Jun 3, 1977. EIS update completed March 1985 for downstream channel did not address Ken Carze Road crossing. Will supplement EIS on this issue when City of Littleton determines final plans regarding crossing.
Great Falls, MT		Aug 12, 1971			
Harry S. Truman Dam and Reservoir, MO.	Sep 15, 1972	Feb 28, 1973 Sep 21, 1973 (Supp)			Appendix to Supplemental filed, Dec 10, 1973. The Final Supplement concerning downstream effects was filed, Nov 28, 1980.
Little Blue River Channel, MO	Sep 17, 1971	Mar 10, 1972			Supplement Info Report on Stage 5 work filed with EPA Feb 24, 1981.
Little Blue River Lakes, MO:					
Blue Springs Lakes		Feb 17, 1972			
Longview Lake.	Jul 6, 1971	Nov 9, 1971			
Long Branch Lake, MO.		Jan 27, 1972			
Missouri National Recreational River		Aug 12, 1980			
Missouri River Levee Systems, LA, Bellevue-Papillion Creek Levees (R616)	Feb 28, 1975	May 21, 1976			Supplement filed, Jan 1978.
Mosquito-Keg Creek Levees (L614-611)	Dec 11, 1974	May 7, 1976			
North County Levee District (L15)			Jan 1987.	Oct 1987.	
Orrick Levees District. (L345-330)			Oct 1988.	Jun 1989.	

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BUDGETED STATUS OF EIS---LAND ACQUISITION, CONSTRUCTION AND REHABILITATION, FISCAL YEAR 1987

Project	Date filed with CEQ/EPA Draft	Final	Scheduled filing plan Draft	Final	Remarks
MISSOURI RIVER (cont'd)					
Papillion Creek, and Tributaries.		.Nov 23, 1971			
Lakes, NE					
EIS Supplement (Site 18) . .	.Dec 18, 1981	.Aug 24, 1982			
EIS Supplement (Site 20)		.Feb 19, 1982			
Ray-Lafayette Drainage.			Apr 1988.	Dec 1988.	
District and Drainage and Levee District (L325-319)					
Riverside-Quindaro Drainage . . .	.Nov 26, 1982	.Nov 18, 1983			
District (L385)					
NORTH PACIFIC					
Bonneville Navigation Lock, OR & WA		.Mar 20, 1981			Draft Supplement filed Aug 16, 1985.
Bonneville 2d Powerhouse.	.Aug 20, 1971	.Apr 14, 1972			Supplement addressing city relocations
OR & WA					was filed with CEQ on Mar 19, 1976.
Chena River Lakes, AK	.Jul 23, 1971	.Oct 26, 1971			Supplement filed, Jul 7, 1980.
Chief Joseph Additional	.May 20, 1971	.Feb 2, 1972			Supplement filed, Jul 17, 1975.
Units, WA					
Lower Columbia River Bank . . .	.Mar 13, 1972	.Jan 31, 1973			Supplement filed, Oct 1, 1976.
Protection, OR & WA					
Lower Snake River Fish.		.Oct 29, 1977			
and Wildlife Compensation, WA, OR & ID					
Mount St. Helens Sediment		.Jan 18, 1985			
Control, WA					
Mud Mountain, WA (Dam Safety. .	N/A	N/A.			
Assurance)					
Snettisham, AK.		.Jan 22, 1971			Final Supplement, Apr 24, 1981.
Willamette River Basin Bank . .	.Jun 16, 1974	.Jul 14, 1975			
Protection, OR					

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BUDGETED STATUS OF EIS---LAND ACQUISITION, CONSTRUCTION AND REHABILITATION, FISCAL YEAR 1987

Project	Date filed with CEQ/EPA Draft	Final	Scheduled filing plan Draft	Final	Remarks
SOUTH PACIFIC					
Corte Madera Creek, CA.	Aug 26, 1974		Apr 13, 1979	Jul 1986	Supplemental.
Dry Creek (Warm Springs), CA.	Jul 18, 1973	Dec 10, 1973			Final Supplemental EIS filed with CEQ Sep 17, 1976.
Fairfield Vicinity Streams, CA.	Apr 5, 1976			Dec 15, 1985.	Environmental Assessment of modified project.
Fisherman's Wharf Area, CA.	Feb 20, 1981				
Little Dell Lake, UT.	Jul 22, 1975				
Los Angeles County Drainage Area (Los Angeles River), CA (Major Rehabilitation)					Negative Assessment Dec 1983.
Lower San Joaquin River, CA				Aug 1986.	
Merced County Streams, CA	Sep 25, 1981				
New Melones Lake, CA.	Mar 15, 1972	Jul 17, 1972			Final Supplement filed with EPA on Mar 18, 1977.
Oakland Outer Harbor, CA.	Feb 27, 1981			Dec 1986.	
Pajaro River, CA.	Nov 3, 1982				
Phoenix Arizona & Vicinity, AZ.	Sep 22, 1976				
Phoenix, AZ (Stage 2)	Aug 20, 1975	Sep 27, 1976		Mar 1986.	FONSI - Mar 25, 1985 assessment.
Port Hueneme, CA.	Aug 29. 1974				Supplemental FONSI - Sep 26, 1985.
Redbank and Pancher Creeks, CA.	Nov 7, 1980				
Richmond Harbor, CA	May 21, 1982			Jul 1986.	Supplemental.
Sacramento River and Major and Minor Tributaries, CA	Aug 30, 1974	Aug 1, 1975			

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BUDGETED STATUS OF EIS---LAND ACQUISITION, CONSTRUCTION AND REHABILITATION, FISCAL YEAR 1987

Project	Date filed with CEQ/EPA Draft	Final	Scheduled filing plan Draft	Final	Remarks
SOUTH PACIFIC (cont'd)					
Sacramento River Bank Protection Project, CA	Jun 15, 1973			Jun 1987.	Supplementals filed, May 6, 1975; Apr 6, 1979; and Feb 1, 1985.
Sacramento River, Chico Landing to Red Bluff, CA	May 6, 1975		Mar 1984 (Unit 7 Supplemental). (Unit 8 Supplemental).		Supplemental filed, May 26, 1983 (Unit 6). Aug 26, 1983 & May 23, 1984 Supplemental for 83-84 contracts.
Sacramento River Deepwater Ship Channel, CA	May 8, 1981			Mar 1986	Supplemental.
Sacramento River, Flood Control Project, CA			Jun 1987 (Remedial Work)		Project essentially completed prior to 1978. FONSI - Mar 1986. If finding shows significant impacts EIS to EPA in June 1987.
San Francisco Bay to Stockton, CA:					
San Francisco Bar	None	Apr 14, 1971			
Venice Island to Stockton	Jun 7, 1971	Oct 14, 1971			
Avon to Stockton	Jun 22, 1980	Jul 26, 1981			
Golden Gate to Stockton			Mar 1986	Jun 1986	Supplemental.
West Richmond Channel	Dec 7, 1983		Not Scheduled		Supplemental.
Carquinez Straight Suisun Bay Channel - Pinole Shoal Channel					
Southhampton Channel & Richmond Long Wharf Maneuvering Area		Jul 15, 1984			
Sweetwater River, CA		Aug 6, 1982			
Walnut Creek, CA	Aug 27, 1975	Jul 27, 1977			
Walnut and San Ramon Creeks	Sep 21, 1983			Aug 13, 1984	Supplemental.
Upper Pine Creek		Dec 24, 1985			
Wildcat and San Pablo Creeks, CA	Jun 7, 1976				Supplemental to EPA Dec 20, 1985.

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BUDGETED STATUS OF EIS---LAND ACQUISITION, CONSTRUCTION AND REHABILITATION, FISCAL YEAR 1987

Project	Date filed with CEQ/EPA Draft	Final	Scheduled filing plan Draft	Final	Remarks
PACIFIC OCEAN					
Agana River, Guam	Dec 4, 1978			Feb 1986	Supplement
Kahoma Stream, Maui, HI	Apr 8, 1975				Supplemental information report, Mar 4, 1983.
NEW ENGLAND					
Jonesport Harbor, ME.	Jan 11, 1973	Apr 30, 1976			
Portsmouth Harbor, NH & ME.					Environmental assessment and finding of no significant impact, Apr 23, 1984.
Revere Beach, Revere, MA.	Nov 9, 1970				Environmental Assessment incorporated into the General Design Memorandum.
NORTH ATLANTIC					
Ardsley, NY	Nov 20, 1973	Jun 18, 1976			
Baltimore Harbor and Channels, MD	Sep 24, 1973	Jan 17, 1975			
Baltimore Harbor and Channels, MD and VA	Jun 5, 1981	Sep 18, 1981			
Barnegat Inlet, NJ.	Apr 21, 1975	Oct 8, 1976			
C&D Canal Bridges, DE & MD. (Major Rehab)					Environmental Assessment will be incorporated into Design Memorandum.
Cowaneseque Lake, PA	Oct 30, 1981	Dec 3, 1982			
Delaware River, Vicinity of Camden, NJ					Environmental Assessment incorporated in GDM.
F. E. Walter Dam, PA. (Modification)	Apr 12, 1985		Mar , 1986		
Kill Van Kull, NY & NJ.	Jul 31, 1978	Jul 31, 1981	Mar , 1986	Jun , 1986	
Liberty State Park Levee. and Seawall, NJ	Mar 26, 1976				EIS prepared by Dept of Interior.
Moriches Inlet, NY.	Oct 28, 1982	Jul 1, 1983			
New York Harbor Collection. and Removal of Drift, NY	Feb 28, 1975	Mar 26, 1976			
Norfolk Harbor and Channels, VA	Jan 28, 1980	Apr 3, 1981			SEIS Jun 14, 1985.
Richmond, VA.	Oct 18, 1974	Oct 8, 1976			SEIS Jul 24, 1981.
Virginia Beach Streams. Canal #2	May 2, 1975	Oct 8, 1976			A final supplement to the final EIS was filed with EPA July 24, 1981.
Virginia Beach, VA (Reimb.)	Jun 28, 1974	Jul 24, 1975			Supplemental information report, Feb 25, 1980.

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BUDGETED STATUS OF EIS---LAND ACQUISITION, CONSTRUCTION AND REHABILITATION, FISCAL YEAR 1987

Project	Date filed with CEQ/EPA Draft	Final	Scheduled filing plan Draft	Final	Remarks
OHIO RIVER					
Barkley Dam & Lake Barkley, KY & TN					Enviromental Assessment, Feb 1984.
Big South Fork Nation River and Recreation Area, KY and TN	Oct 3, 1975	May 14, 1977			
Dashields Lock and Dam, Ohio River, PA					Final Enviromental Assesment filed Nov 15, 1985.
Evansville, IN	Jul 3, 1973	Nov 19, 1973			
Gallipolis Locks & Dam, WV & OH	Dec 12, 1980	Jan 8, 1981			
Grays Landing	Sep 30, 1983	Aug 10, 1984			
Lavisa & Tug Forks of the Big Sandy River & Upper Cumberland River, WV, VA & KY:					
Williamson, WV.	Sep 25, 1981	Dec 8, 1982			
Pineville, KY	Sep 18, 1981	Dec 30, 1982			
Barbourville, KY.					Enviromental Assessment, Feb 1984.
Lock and Dam 53, IL & KY (Major Rehab)	Feb 16, 1979	Feb 7, 1980			
Mill Creek, OH	Oct 7, 1970	Oct 17, 1974			
Montgomery Locks & Dam, PA (Major Rehab)					Enviromental Assessment, Apr 1984.
Muskingum River Lakes, OH. (Major Rehab)					
Newark, Oh	Jul 28, 1972	Oct 1, 1974			
Point Marion	Sep 30, 1983	Aug 10, 1984			
Smithland Locks and Dam, IL. and KY		Feb 5, 1971			
Southwestern Jefferson, County, KY	Dec 9, 1971	Jul 12, 1973			
Stonewall Jackson Lake, WV		Nov 12, 1971			
Turtle Creek					Enviromental Evaluation scheduled in FY 1986.
Winfield.			Apr 1986	Jul 1987	

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BUDGETED STATUS OF EIS---LAND ACQUISITION, CONSTRUCTION AND REHABILITATION, FISCAL YEAR 1987

Project	Date filed with CEQ/EPA Draft	Date filed with CEQ/EPA Final	Scheduled filing plan Draft	Scheduled filing plan Final	Remarks
SOUTH ATLANTIC					
B. Everett Jordan Dam and Lake, NC	May 11, 1971	Oct 22, 1971			
Broward County, FL					Local sponsor will prepare Environmental assessment and obtain State Water Quality Certification.
Canaveral Harbor, FL	Oct 12, 1984	Nov 15, 1985			
Central and Southern Florida:					
Shingle Creek			Mar 1986	Jun 1986	Environmental Assessment, May 1984.
Upper St. Johns River Basin			Mar 1986	Jun 1986	
Dade County, FL	Mar 3, 1975	Aug 20, 1976			Supplement on North Haulover Beach Park filed Mar 18, 1983.
Duval County, FL	Jun 6, 1974	Sep 10, 1975			
Falls Lake, NC	Aug 28, 1973	May 1, 1974			
Four River Basins, FL:					
C-135 and Lower Hillsborough Basin	May 25, 1973	Nov 8, 1974			
C-132, S-153 and S-154					Environmental Assessment, 3 Feb 1981.
Gulfport Harbor, MS				Jun 1988	
Jacksonville Harbor, FL	Dec 21, 1979	Aug 14, 1981			
Mobile Harbor, AL	Jul 13, 1979	May 22, 1981			Supplement for Gulf Disposal filed Dec 13, 1985.
Palm Beach County (Martin County Line to Lake Worth Inlet, and South Lake Worth Inlet to Broward County Line), FL	May 24, 1985			Jun 1986	
Pinellas County, FL:					
Long Key, FL					Environmental Assessment, Sep 20, 1978.

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BUDGETED STATUS OF EIS---LAND ACQUISITION, CONSTRUCTION AND REHABILITATION, FISCAL YEAR 1987

Project	Date filed with CEQ/EPA Draft	Final	Scheduled filing plan Draft	Final	Remarks
SOUTH ATLANTIC (Con't)					
Sand Key, FL	May 25, 1984	Nov 8, 1985			
Treasure Island, FL					Environmental Assessment, Feb 1, 1982.
Ponce Harbor, PR	Mar 21, 1975	Jun 25, 1976			
Portugues and Bucana Rivers, PR	Apr 27, 1973	Feb 25, 1974			
Richard B. Russell Dam and Lake, GA and SC	Jul 1, 1971	May 31, 1974			Water Quality Supplement, Jun 2, 1976. Pumped Storage Supplement, Oct 26, 1979. FSML Mitigation Supplemental, Dec 11, 1981.
Savannah Harbor, GA	Sep 16, 1977	Mar 20, 1981			
Sawashee Creek, Meridan, MS	Oct 14, 1983	Oct 12, 1984			
Tampa Harbor, FL	Jul 31, 1974	Jul 18, 1975			Supplement filed Jun 3, 1977.
Threemile Creek, Mobile, AL	Jun 11, 1982	Nov 10, 1983			
Tombigbee River and Tributaries, MS and AL	Jun 18, 1974	May 30, 1975			Supplement on Luxapalila Creek scheduled for Aug 1986.
Tybee Island, GA	May 5, 1973	Nov 13, 1973			
William Bacon Oliver Lock & Dam Replacement	Apr 8, 1983	Jun 15, 1984			

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STATUS OF PROJECTS IN LITIGATION

Mr. BEVILL. Bring the Committee up to date on the status of any project in litigation.

General HEIBERG. We will provide the status of litigation for the record.

[The information follows:]

STATUS OF PROJECTS IN LITIGATION UPDATE

As of February 12, 1986 the following Corps projects are being delayed due to litigation:

1. Cross Florida Barge Canal, Florida—In 1981 the court dismissed the lawsuit but continued in effect an injunction prohibiting the Corps from doing any work in the canal right-of-way without its approval. (Environmental Defense Fund v. Corps of Engineers, M.D.Fla.)

2. Harvey Canal—Bayou Barataria Levee, Louisiana—Landowners challenged the validity of the Corp's decision to modify this flood control project by deleting land reclamation features, including a pump station. In 1980 the District Court held the modification was valid, and the Plaintiffs appealed. In 1982, the Fifth circuit held that while the decision was based on cogent policy reasons and was not arbitrary, it was issued without first obtaining local assurances for the modification. The matter was remanded to the Corps with instructions to supplement the record. On January 24, 1986 the U.S. filed a motion to dismiss the suit because local assurances cannot be obtained for the modified project and completion of the orginial project is barred by EPA's Section 404(c) veto. (Creppel v. U.S. Army Corps of Engineers, E.D.La.)

3. Imperial Beach, California—The District Court has enjoined construction of this beach erosion control project; it found that significant changes which have occurred since the EIS was prepared in 1978 have necessitated the preparation of supplemental environmental documentation. (Knox v. U.S. Army Corps of Engineers, S.D.Cal.)

4. Kaulana Bay, Hawaii—In 1984 the parties to a lawsuit challenging this project settled the case. However, a claim against the State of Hawaii is still in litigation in State Court, and the project is being held in abeyance pending its outcome. (Ahia v. Marsh, D.Haw.)

5. Santa Paula Flood Control, California—This project was enjoined in 1976, because the Court found the EIS prepared for it inadequate. A supplemental EIS has been prepared and is under review. (Friends of Santa Paula Creek v. Calloway, C.D.Cal.)

6. Sicily Island Area Levee Project, Louisiana—The Plaintiffs allege the EIS prepared for the project is inadequate. The District Court ruled for the Government, but the Fifth Circuit remanded the case back to the lower court for a determination as to whether a supplemental EIS should be prepared. No work is being done on the project as there are no funds. (Louisiana Wildlife Federation v. York, E.D.La.)

7. Trinity River, Texas—The project has been enjoined since 1973. An EIS has been filed with EPA, and the Record of Decision is pending. (Sierra Club v. Marsh, (S.D.Texas)

8. Wallisville Lake, Texas—This project has also been enjoined since 1973. In 1983 Congress modified the project with respect to its physical elements and planned operation. An EIS on the revised project was prepared, and the U.S. filed a motion to dissolve the injunction. Trial was held in November 1985, and we are awaiting the Court's decision. (Sierra Club v. Marsh, S.D.Texas).

BALANCE-TO-COMPLETE REPORT

Mr. BEVILL. Prepare the detailed summary of projects similar to that submitted for last year's hearings.

General HEIBERG. Yes, sir.

[The information follows:]

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CORPS OF ENGINEERS - CIVIL WORKS
SUMMARY OF ADVANCE ENGINEERING & DESIGN
(Thousands of Dollars)

	No. of Proj.	Preconst. Planning Estimate	Allocations Thru FY 1986 1/	Budget FY 1987	Balance to Complete 2/ Scheduled	Balance to Complete 2/ Unscheduled
1. PROJECTS IN FY 1987 BUDGET:						
AE&D New Starts	2	1,665	250	650	765	31,917
Flood Control	2	1,665	250	650	765	31,917
Continuing AE&D	16	37,705	18,469	6,279	12,957	1,296,455
Navigation	2	1,560	1,275	240	45	20,780
Flood Control	10	20,945	11,530	3,799	5,616	261,675
Multiple Purpose	2	7,900	2,392	650	4,858	925,100
MR&T Features	2	7,300	3,272	1,590	2,438	88,900
Total	18	39,370	18,719	6,929	13,722	1,328,372
2. PROJECTS NOT IN BUDGET:						
AE&D Not Started	30	23,839	0	0	0	1,257,280
Navigation	11	4,495	0	0	0	81,600
Beach Erosion Control	5	2,069	0	0	0	83,960
Flood Control	10	13,145	0	0	0	603,530
Multiple Purpose	4	4,130	0	0	0	488,190
AE&D Not Completed	37	113,903	49,380	0	0	4,222,261
Navigation	13	52,133	15,964	0	0	1,835,222
Beach Erosion Control	3	3,295	2,306	0	0	133,614
Flood Control	18	54,095	29,483	0	0	1,730,352
Multiple Purpose	3	4,380	1,627	0	0	523,073
AE&D Fully Funded	33	61,329	61,329	0	0	574,094
Navigation	9	3,929	3,929	0	0	61,016
Beach Erosion Control	1	222	222	0	0	7,878
Flood Control	18	50,913	50,913	0	0	312,067
Multiple Purpose	2	2,530	2,530	0	0	106,870
MR&T Features	3	3,735	3,735	0	0	86,263
Total	100	199,071	110,709	0	0	6,053,635
GRAND TOTAL	118	238,441	129,428	6,929	13,722	7,382,007

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CORPS OF ENGINEERS - CIVIL WORKS
SUMMARY OF CONSTRUCTION PROJECTS
(Thousands of Dollars)

	No. of Proj.	Estimated Federal Cost	Allocations Thru FY 1986 1/	Budget FY 1987	Balance to Complete 2/ Scheduled	Unscheduled
1. PROJECTS IN FY 1987 BUDGET:						
Construction New Starts	19	452,845	17,998	46,810	387,462	575
Navigation	5	43,398	755	12,150	30,493	0
Beach Erosion Control	1	5,170	483	700	3,412	575
Flood Control	13	404,277	16,760	33,960	353,557	0
Continuing Construction	141	25,328,161	12,923,180	1,115,643	7,774,018	3,515,320
Navigation	41	6,846,689	2,606,239	369,886	1,369,796	2,300,768
Beach Erosion Control	7	91,926	49,404	14,245	17,641	10,636
Flood Control	74	7,197,800	3,870,757	470,788	2,007,783	848,472
Multiple Purpose	7	2,839,000	2,541,561	67,700	134,329	75,410
MR&I Features	12	8,352,746	3,855,219	193,024	4,024,469	280,034
Major Rehabilitation	5	121,440	76,160	26,870	18,410	0
Navigation	3	66,840	36,759	15,470	14,611	0
Flood Control	2	54,600	39,401	11,400	3,799	0
Dam Safety Assurance	5	66,660	7,200	17,460	42,000	0
Flood Control	3	41,460	5,300	10,960	25,200	0
Multiple Purpose	1	16,200	1,200	3,000	12,000	0
MR&T Feature	1	9,000	700	3,500	4,800	0
Total	170	25,969,106	13,024,538	1,206,783	8,221,890	3,515,895
2. PROJECTS NOT IN BUDGET:						
Construction	105	8,444,237	5,521,314	0	0	2,922,923
Navigation	23	3,231,278	2,605,567	0	0	625,711
Beach Erosion Control	15	121,077	44,757	0	0	76,320
Flood Control	48	2,730,077	1,497,886	0	0	1,232,191
Multiple Purpose	8	1,630,727	1,163,588	0	0	467,139
MR&T Features	11	731,078	209,516	0	0	521,562
Major Rehabilitation	1	9,800	6,900	0	0	2,900
Navigation	1	9,800	6,900	0	0	2,900
Dam Safety Assurance	5	143,500	9,230	0	0	134,270
Flood Control	3	110,300	6,880	0	0	103,420
Multiple Purpose	2	33,200	2,350	0	0	30,850
Total	111	8,597,537	5,537,444	0	0	3,060,093
GRAND TOTAL	281	34,566,643	18,561,982	1,206,783	8,221,890	6,575,988

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CORPS OF ENGINEERS - CIVIL WORKS
SUMMARY - ALL AUTHORIZED PROJECTS
(Thousands of Dollars)

	No. of Proj.	Estimated Federal Cost	Allocations Thru FY 1986 1/	Budget FY 1987	Balance to Complete 2/ Scheduled	Unscheduled
ACTIVE PROJECTS:						
Advance Engineering & Design	118	238,441 3/	129,428	6,929	13,722	7,382,007
Construction Projects	281	34,566,643	18,561,982	1,206,783	8,221,890	6,575,988
DEFERRED PROJECTS	144	3,824,913 4/	162,854	0	0	3,662,059
(MR&T Features)	(4)	(151,077)	(9,390)			(141,687)
INACTIVE PROJECTS	392	6,795,835 4/	202,547	0	0	6,593,288

1/ Does not reflect reductions required by the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177).

2/ Based on total cost of project.

3/ Preconstruction planning estimate only.

4/ Not adjusted to reflect current price level.

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19 Feb 1986

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KEY TO DIVISION/DISTRICT ABBREVIATIONS

LMV Lower Mississippi Valley Division

LMM Memphis District (MTM)*
LMN New Orleans District (MTN)*
LMS St. Louis District
LMK Vicksburg District (MTV)*

MRD Missouri River Division

MRK Kansas City District
MRO Omaha District

NED New England Division

NAD North Atlantic Division

NAB Baltimore District
NAN New York District
NAO Norfolk District
NAP Philadelphia District

NCD North Central Division

NCB Buffalo District
NCC Chicago District
NCE Detroit District
NCR Rock Island District
NCS St. Paul District

NPD North Pacific Division

NPA Alaska District
NPP Portland District
NPS Seattle District
NPW Walla Walla District

ORD Ohio River Division

ORH Huntington District
ORL Louisville District
ORN Nashville District
ORP Pittsburgh District

POD Pacific Ocean Division

SAD South Atlantic Division

SAC Charleston District
SAJ Jacksonville District
SAM Mobile District
SAS Savannah District
SAW Wilmington District

SPD South Pacific Division

SPL Los Angeles District
SPK Sacramento District
SPN San Francisco District

SWD Southwestern Division

SWA Albuquerque District
SWF Fort Worth District
SWG Galveston District
SWL Little Rock District
SWT Tulsa District

* Additional District abbreviations for Mississippi River and Tributaries.

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NEW AEGD PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	PRECONST. PLANNING EST.	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL						
SWA	RIO GRANDE FLOODWAY, SAN ACACIA TO ..... DESEQUE DEL APACHE, NM.....	1230	0	500	730	31070
WCB	OTTAWA, CH.....	435	250 5/	150	35	847
	TOTALS # OF PROJECTS	1665	250	650 (2)	765	31917

CONTINUING AEGD PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	PRECONST. PLANNING EST.	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
NAVIGATION						
NAN	SHINNECOCK INLET, NY.....	1000	755	200	45	17230
NED	BRISTOL HARBOR, RI.....	560	520	40	0	3550
	TOTALS # OF PROJECTS	1560	1275	240 (2)	45	20780

5/ Funds allotted in fiscal year 1985 for preliminary assessment report.

CONTINUING AED PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	PRECONST. PLANNING EST.	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL						
NAO	WASHINGTON, DC & VICINITY (1946 MOD)....	1620	180	485	955	938C
SWT	BOGGLASS LAKE, KS.....	3000	415	265	232C	8150C
NCS	EAST GRAND FORKS, MN.....	2000	1488	512	0	2540C
NCS	TWIN VALLEY LAKE, WILD RICE RIVER, MN...	2200	2062	138	0	2790C
NCR	NANANGAL, NE.....	775	651	124	C	5343
NCS	SHEYENNE RIVER FLOOD CONTROL PROJECT, .. ND.....	4200	3505	695	C	3680C
SWA	ALAMOGORDO, NM.....	1270	639	330	301	1233C
SWA	RIO GRANDE FLOODWAY - TRUTH OR ..... CONSEQUENCES UNIT, NM.....	1330	1130	200	C	1427C
NAB	SAW MILL RIVER AT ELMSFORD AND ..... GREENBURGH, NY.....	950	79C	5C	11C	505C
NAP	PROMPTON LAKE, PA (PCD).....	3600	670	1000	193C	3670C
	TOTALS # OF PROJECTS	20945	11530	3799 (10)	5616	261675

CONTINUING AED PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	PRECONST. PLANNING EST.	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
MULTIPLE PURPOSE						
SWF	ROCKLAND LAKE, TX.....	4400	250	450	370C	76260C
SWF	TRINITY RIVER CHANNEL TO LIBERTY, TX....	3500	2142	200	115E	16250C
	TOTALS # OF PROJECTS	7900	2392	65C (2)	485E	925 10C

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MISSISSIPPI RIVER & TRIBUTARIES
CONTINUING AE&D PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	PRECONST. PLANNING EST.	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL						
MTN	L'ANGUILLE RIVER, AR.....	2900	1925	655	320	2670C
MTN	EASTERN RAPIDES AND SOUTH-CENTRAL ..... ANCYELLES PARISHES, LA.....	4400	1347	935	2118	6220C
	TOTALS # OF PROJECTS	7300	3272	1590 (2)	2438	8890C

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PROJECTS NOT IN FY-87 BUDGET
AE&C NOT STARTED
(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	PRECONST. PLANNING EST.	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
NAVIGATION						
POD	NAWILIWILI DE HARBOR, KAUAI, HI 1970 ... ACT.....	225	0	0	C	398C
POD	REEDS BAY SMALL BOAT HARBOR 1965 ACT....	90	0	0	C	159C
NAN	OCEAN CITY HARBOR, INLET & SINEPUXENT ... BAY, MD.....	185	0	0	0	109C
NCE	FORESTVILLE HARBOR, MI 1968 ACT.....	550	0	C	C	261C
NCE	HOLLAND HARBOR ENTRANCE CHANNEL.....	650	0	0	C	337C
NCE	MIDDLE CHANNEL-ST CLAIR RIVER, MI 1946 .. ACT.....	360	0	0	0	85C
NCS	GUIDEWALL EXT LOCK NO 3, PA 1930, 35 .... ACTS.....	200	0	0	C	311C
SAM	MOREHEAD CITY HARBOR, NC 1937 ACT.....	320	0	0	C	5470C
NAP	DEL RIV PHILA, PA-TRENTON, NJ SEC 201, ... 1976.....	265	0	0	C	2300
NCH	PORT BAY 1950 R&H ACT.....	1000	0	0	C	620C
NCH	CONNEAUT HBR 1966 R&H ACT 6FT CHANNEL .. AAC WKS.....	650	0	0	C	180C
	TOTALS # OF PROJECTS	4495	0	0 (11)	C	81600

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PROJECTS NOT IN FY-87 BUDGET
AE&C NOT STARTED
(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	PRECONST. PLANNING EST.	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
BEACH EROSION						
SAJ	LEE COUNTY,FL SEC 201, AUTH 1970.....	471	0	0	0	250C
SAJ	LIDO KEY,FL 1970 ACT.....	212	0	0	C	148C
NAP	TOWNSEND INLET & SEVEN PI BE,NJ SEC 201, 1970.....	480	0	C	C	7502C
NCB	FORT NIAGARA STATE PARK SEC 201 AUTH ... 1970.....	420	0	0	C	390C
SAJ	SAN JUAN AND VICINITY, PR (1962 ACT).....	486	0	C	C	106C
	TOTALS # OF PROJECTS	2069	0	0 (5)	C	8396C

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PROJECTS NOT IN FY-87 BUDGET
AE&C NOT STARTED
(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	PRECONST. PLANNING EST.	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL						
APW	LUCKY PEAK SECOND OUTLET IDAHO 1976 ACT.	660	0	0	0	4100
LMS	BIG SWAN D+L DIST,IL.....	1500	0	0	0	14000
LMS	FT CHARTRES & IVY DRAIN DIST NO 5 &.....	1400	0	0	0	2600
LMS	SCOTT COUNTY D+L DIST, IL.....	1500	0	0	0	16100
ORL	DOWNEYVILLE LAKE,IN 1968 ACT.....	875	0	0	0	74200
PRK	MELVERN & POMONA LAKES RD IMPR,KS 1974 . ACT.....	90	0	0	0	500
PRK	TUTTLE CREEK LAKE ROAD & BRIDGE,KS 1976. ACT.....	120	0	0	0	630
PRK	LOWER GRAND RIVER, MO 1965 ACT.....	1800	0	0	0	39500
SWF	NAVASOTA LAKE,TX 1968 ACT.....	3500	0	0	0	395000
SWF	PECAN BAYOU LAKE,TX 1968 ACT.....	1700	0	0	0	95900
	TOTALS	13145	0	0	0	603530
	# OF PROJECTS			(10)		

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PROJECTS NOT IN FY-87 BUDGET
AE&D NOT STARTED
(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	PRECONST. PLANNING EST.	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
MULTIPLE PURPOSE						
SAM	LOWER ALCHUPPKEE CREEK LAKE, GA 1965 ... ACT.....	1800	0	0	0	25900C
ORH	CELINA LAKE.....	2000	0	0	0	21300C
PRO	SPRINGFIELD WATER INTAKE, SE.....	200	0	0	0	256C
SWT	DENISON DAM FWR UNIT 3,CK,T3 1938,57 ... ACTS.....	130	0	0	0	1363C
	TOTALS # OF PROJECTS	4130	0	0 (4)	0	48819C

PROJECTS NOT IN FY-87 BUDGET
AE&C NOT COMPLETED
(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	PRECONST. PLANNING EST.	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
NAVIGATION						
SAM	MONTGOMERY TC GASDSDEN, AL (1945 ACT).....	32000	11000	0	C	127500
SPN	SC C RIVER AND HARBOR (CHANNEL ..... EXTENSION), CA.....	580	450	0	C	175
SPN	MOYC RIVER AND HARBOR (BREAKWATER), CA..	1560	773	0	C	6357
POD	KAUNAKAKAI LD HARBOR, MOLOKAI, HI 1962 ... ACT.....	57	35	0	C	1485
POD	KA-AIHAE SM BOAT HBR, MAUAII, HI 1965 ACT.	85	83	0	C	1807
NCE	CROSS VILLAGE HBR, PA.....	710	364	0	C	4698
NCS	HARRIET ISLAND.....	75	9	0	C	267
LMK	YAZOO RIVER, MS (AEBC).....	9700	2045	0	C	226166
NAP	CORSONS INLET & LUDHAM BEACH, NJ SEC 201, 1970.....	531	314	0	C	82286
SWT	BIG & LITTLE SALLISAW CREEK OK.....	370	335	0	C	5465
NCH	ELK CREEK HARBOR, PA 1966 ACT.....	925	101	0	C	4286
SWT	RED RIVER WATERWAY TX AR OK LA INDEX AR. TC DEARSCA DAM T).....	5000	105	0	C	216895
NCE	GREEN BAY HARBOR 1962 ACT BROWN COUNTY..	540	350	0	C	4760
	TOTALS # OF PROJECTS	52133	15964	0 (13)	C	1835222

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PROJECTS NOT IN FY-87 BUDGET
AERE NOT COMPLETED
(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	PRECONST. PLANNING EST.	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
BEACH EROSION						
SAW	FORT FISHER & VICINITY,NC SEC 201,1976..	775	598	0	0	3822
NAP	GREAT EGG HBR INLET & PECK BE,NJ SEC ... 2C1,7C.....	520	388	0	0	103212
NAN	SEABRIGHT TO OCEAN TOWNSHIP NJ 1958 ACT.	2000	1320	0	0	26580
	TOTALS	3295	2306	0	0	133614
	# OF PROJECTS			(3)		

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PROJECTS NOT IN FY-87 BUDGET
AE&D NOT COMPLETED
(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	PRECONST. PLANNING EST.	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL						
SPL	GILA AND SALT RIVERS, GILLESPIE DAM TO . PEEDWELL DAMSITE, AZ.....	5970	34	0	C	5936
SPK	COTTONWOOD CREEK, CA (AE&D).....	20900	15815	0	0	708185
SPL	GOLETA AND VICINITY, CA (AE&D).....	2650	1238	0	C	3262
ORL	LOUISVILLE LAKE,IL 1968 ACT.....	2900	1650	0	0	10235C
LMS	MERECOSIA LAKE AND BILLCO CREEK D&LD, .. IL.....	1400	576	0	C	6784
LMS	MERECOSIA, IL & MEREDOSIA, ILLCO CREEK, AND CCON RUN D&L DIST, IL.....	1500	713	0	C	12417
CRL	RUSSELL & ALLISON LEVEE 1938 ACT ..... LAWRENCE.....	1025	52	C	C	16548
MRK	FORT SCOTT LAKE, KANSAS.....	1300	758	0	0	82042
LMK	RED RIVER WATERWAY, SHREVEPORT,LA TO ... VICINITY INDEX,AR.....	1700	858	0	C	241642
NED	NORTH NASHUA FLOOD CONTROL PROJECT, MA . (AE&D).....	725	300	C	C	425
LMS	MENAPEC RIVER BASIN, MO (FC).....	1800	1350	0	0	795C
SAC	REDDIES RIVER LAKE,NC 1946 ACT.....	1800	986	0	C	36714
NAN	SOUTH ELLENVILLE, NY (AE&D).....	1040	290	C	C	847C
NPP	JOHNSON CREEK OR.....	410	170	0	0	554C
NPP	PENINSULA DRAINAGE DIST NO 2.....	455	35	0	0	3435
NAP	POTTSTOWN,PA -SEC 2C1, AUTH 1974.....	1030	487	C	C	4223
SWF	PELLICAN LAKE,TX 1968 ACT.....	5800	3627	0	C	358373
NPS	WENATCHEE CANYONS 182,WA SEC 201 AUTH .. 1970.....	1690	544	0	0	43056
	TOTALS	54095	29483	0	C	173C352
	# OF PROJECTS			(18)		

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PROJECTS NOT IN FY-87 BUDGET
AE&C NOT COMPLETED
(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	PRECONST. PLANNING EST.	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
MULTIPLE PURPOSE						
SAM	LAZER CREEK LAKE, GA (1965 ACT).....	1180	810	0	0	303190
NED	LINCOLN SCHOOL LAKE, ME (1965 ACT).....	1200	200	0	0	182800
MRD	EAGLE NAY & FT YATES HYD BRIDGE, ND .... 1970 ACT.....	2000	617	0	0	370830
	TOTALS	4380	1627	0	0	523073
	# OF PROJECTS			(3)		

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PROJECTS NOT IN FY-87 BUDGET
AEGE FULLY FUNDED
(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	PRECONST. PLANNING EST.	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
NAVIGATION						
NPA	KAKE HARBOR AK 1968 ACT.....	856	856	0	0	11644
POD	KIKIAOLA SMALL BOAT HBR, KAUAI, HI 1968, ACT.....	193	193	0	0	1667
NCR	SAVANNA SMALL BOAT HARBOR,IL 1962 ACT...	85	85	0	C	213
NCE	CEDAR RIVER HARBOR PROJ, 1965 ACT.....	265	265	0	C	1205
NCE	BEALER BAY HARBOR,MA 1965 ACT.....	293	293	0	C	2897
NCE	KNIFE RIVER HARBOR,MN 1974 ACT.....	141	141	0	C	2105
NCE	LUTSEN HARBOR,MN 1965 ACT.....	357	357	0	C	8693
NPP	CHETCO RIVER OREGON.....	235	235	0	C	7565
SWG	NECHES RIV & TRIBS SALTWATER BARRIER,TX, 1970.....	1504	1504	0	C	25023
	TOTALS	3929	3929	0	0	61014
	# OF PROJECTS			(9)		

PROJECTS NOT IN FY-87 BUDGET
AEGE FULLY FUNDED
(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	PRECONST. PLANNING EST.	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
BEACH EROSION						
SAJ	MANATEE COUNTY,FL SEC 2C1, AUTH 1975....	222	222	0	C	7878
	TOTALS	222	222	0	C	7878
	# OF PROJECTS			(1)		

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PROJECTS NOT IN FY-87 BUDGET
AE&D FULLY FUNDED
(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	PRECONST. PLANNING EST.	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL						
SPL	SAN LUIS REY RIVER, CA	2024	2024	0	C	24976
SAS	BROADWAY LAKE SC 1974 ACT	99	99	0	C	3591
NCH	DAVENPORT,IA 1970 ACT	1690	1690	0	C	27310
NCH	ROLINE,IL SEC 201, 1972	1440	1440	0	C	14960
LMS	NUTWOOD E&L DIST,IL	1025	1025	0	C	5475
ORH	MARTIN, KY, LPP	212	212	0	C	11218
ORL	SOUTH FRANKFORT KY	682	682	0	C	6438
LPK	WEST AGLES LEVEE, LA 1976 WAD ACT	320	320	0	C	480
NCE	SAGINAW RIVER, WASSER UNIT, MI (AE&D)	24461	24461	0	C	2e239
NCS	CHASKA,MN 1976 ACT	1828	1828	0	C	14772
NCW	OANSVILLE & VIC, NY 1968 ACT	490	490	0	C	610
NCW	REAC BEACH-HOWARD FARMS,CH 1968 ACT	607	607	0	C	5683
SWT	ARK-RED RIV BASINS CHLORIDE CONTROL, OK, TX,KS	11350	11350	0	C	125650
NAP	HAY CREEK,BIRDSBORO,PA SEC 201,AUTH 1976	365	365	0	C	2043
NAB	TAMAQUA, PA	1750	1750	0	C	5430
NAO	RICHMOND FILTRATION PLANT,VA 1976 ACT	478	478	0	C	7283
NPW	ZINTEL CANYON DAM,AZ SEC 201 AUTH 1970	545	545	0	C	4255
NCS	STATE ROAD AND EBNER COULEES,WI 1968 ACT	1547	1547	0	C	25653
	TOTALS	50913	50913	0	C	312067
	# OF PROJECTS			(18)		

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PROJECTS NOT IN FY-87 BUDGET
AEGC FULLY FUNDED
(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	PRECONST. PLANNING EST.	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
MULTIPLE PURPOSE						
APP	STABLE LAKE & COLGAR ADDL UNIT.....	1790	1790	0	0	87610
SWF	TOMA BLUFF/STEINHAGEN DAM - HYDROPOWER..	740	740	0	0	19260
	TOTALS	2530	2530	0	0	106870
	# OF PROJECTS			(2)		

PISSISSIPPI RIVER & TRIBUTARIES
PROJECTS NOT IN FY-87 BUDGET
AEGC FULLY FUNDED
(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	PRECONST. PLANNING EST.	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL						
MTM	BIG CREEK & TRIBS LOWER WHITE RIVER AR..	345	345	0	0	54033
MTM	PISSISSIPPI DELTA REGION, LA 1965, 1976, ACTS.....	250.	2500	0	0	33200
MTM	HARRIS FORK CREEK KY & TN 1976 ACT.....	870	870	0	0	16430
	TOTALS	3735	3735	0	0	86263
	# OF PROJECTS			(3)		

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NEW CONSTRUCTION PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
NAVIGATION						
SPN	OAKLAND OUTER HARBOR, CA	14900	240	2500	12160	0
SAJ	JACKSONVILLE HARBOR, MILL COVE, FL	4000	0	2000	2000	0
NED	PORTSMOUTH HARBOR AND PISCATAQUA RIVER, NH & ME	14300	0	3000	11300	0
NAP	DELAWARE RIVER IN THE VICINITY OF CAMDEN, NJ	2870	220	2650	0	0
SAJ	PONCE HARBOR, PR	7378	295	2000	5033	0
	TOTALS # OF PROJECTS	43398	755	12150 (5)	30493	0

NEW CONSTRUCTION PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
BEACH EROSION						
NED	REVERE BEACH, MA	5170	483	700	3412	575
	TOTALS # OF PROJECTS	5170	483	700 (1)	3412	575

NEW CONSTRUCTION PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL						
SAM	THREEMILE CREEK, MOBILE, AL	9470	62	2300	7108	C
SWL	FOURCHE BAYOU IN THE VICINITY OF LITTLE ROCK, AR	18260	314	760	17186	C
SPK	PAJARO RIVER, CA	1820	560	500	760	C
SPK	REDBANK AND FANCHER CREEK, CA	55200	730	2000	52470	C
POD	AGANA RIVER, GUAM	3860	0	700	3160	C
NCR	SOUTH OLIVET LEVEE AND DRAINAGE DISTRICT, IL	9670	331	1000	8335	C
SWT	GREAT BEND, KS	43535	2084	2600	38851	C
SWT	HALSTEAD, KS	5012	42	1100	4470	C
NCS	SOUTH FORK ZUMBRO RIVER AT ROCHESTER, PA	53000	3130	1400	48470	C
SAM	SOUAMEE CREEK, MERIDIAN, MS	11250	136	900	10214	C
NAO	FRANCIS E. WALTER DAM MODIFICATION, PA	14400	5755	3000	5645	C
SWT	LAKE WICHITA, MCCLISKY CREEK AT WICHITA FALLS, TX	30000	25	700	25275	C
NPP	PT ST HELENS SEDIMENT CONTROL, WA	148000	3591	17000	127405	C
	TOTALS # OF PROJECTS	404277	16760	33960 (13)	353357	C

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CONTINUING CONSTRUCTION PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
NAVIGATION						
SAM	MOBILE HARBOR, AL	228980	306	15000	32944	180730
SAM	WILLIAM BACON OLIVER LOCK & DAM REPLACEMENT, AL	65000	4067	10500	50433	0
SWL	MCCLELLAN-KERR ARK RIVER NAV SYSTEM LOCKS AND DAMS, AR & OK	545590	540166	2000	3424	0
LPK	OUACHITA AND BLACK RIVERS, AR & LA	272000	214224	7880	34088	15808
SPN	FISHERMAN'S WHARF AREA, CA	8900	8350	550	0	0
SPL	PORT HUENEME HARBOR, CA (UNSTARTED SEPARABLE ELEMENT)	2501	1481	1020	0	0
SPN	RICHMOND HARBOR, CA	19300	950	8000	10350	0
SPK	SACRAMENTO RIVER DEEPWATER SHIP CHANNEL, CA	52700	1234	3600	46966	900
SPN	SAN FRANCISCO BAY TO STOCKTON, CA	138000	48543	3900	16150	69407
SAJ	CANAVERAL HARBOR, FL	26360	12262	3100	0	10938
SAJ	TAMPA HARBOR BRANCH CHANNELS, FL	42800	935	7400	34465	0
SAS	SAVANNAH HARBOR, GA	8235	550	3200	4485	0
LMS	LOCK & DAM 26, MISSISSIPPI RIVER, ALTON, IL & MO	748000	406513	85000	252827	3660
LPS	LOCK & DAM 26, SECOND LOCK, IL & MO	140000	2000	2000	136000	0
ORL	SMITHLAND LOCKS AND DAM, OHIO RIVER, IL, IN & KY	275800	273281	486	0	2033
MCR	UPPER MISS NVR SYSTEM ENVIR MANGMENT PLAN, IL, IA, MO, MN, & WI	196000	1000	1000	89725	104275
LPN	MISS RIVER-GULF OUTLET, LA	491000	87540	2000	10450	391010
LMN	MISS RIVER, BATON ROUGE TO THE GULF OF MEXICO, LA	357000	30880	19400	17481	289235
LMN	MISSISSIPPI RIVER SHIP CHANNEL, GULF TO BATON ROUGE, LA	168000	4751	9000	98512	55737
LMK	RED RIVER WATERWAY, MISSISSIPPI RIVER TO SHREVEPORT, LA	1582000	715478	28000	50675	777843
NAB	BALTIMORE HARBOR & CHANNELS, MD (BREWERTON CHANNEL)	43300	27840	5000	10460	0

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CONTINUING CONSTRUCTION PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
NAVIGATION (CONTINUED)						
NAB	BALTIMORE HARBOR AND CHANNELS, MD & VA . (50 FT DEEPENING).....	174000	18720	54000	63280	38000
NED	JONESPORT HARBOR, ME.....	8850	710	4700	3360	C
LMS	MISS RIVER BTWN THE OHIO AND MO RIVERS . (REG WORKS), MO & IL.....	181000	110590	4000	66410	C
SAM	GULFPORT HARBOR, MS.....	36900	700	800	35400	C
NAP	BARNEGAT INLET, NJ.....	24250	810	6000	17440	C
NAN	KILL VAN KULL & NEWARK BAY CHANNEL, NY . & NJ.....	191000	600	12000	56400	82000
NAN	PORTCHES INLET, NY.....	5000	1226	2500	1274	C
NAN	NY HARBOR COLLECTION AND REMOVAL OF .... DRIFT, NY & NJ.....	50800	19429	4600	26771	C
NCO	PORT ONTARIO, NY.....	2760	1010	800	950	C
NCO	CLEVELAND HARBOR, OH.....	5850	415	2700	C	2735
NCO	GENEVA-ON-THE-LAKE, OH.....	4610	1265	1500	1845	C
NPP	BONNEVILLE NAVIGATION LOCK, OR & WA.....	101500	4000	10000	87500	C
ORP	GRAYS LANDING, LOCK & DAM 7, ... MONONGAHELA RIVER, PA.....	60500	640	670	550	53690
ORP	POINT MARION, LOCK & DAM 8, MONONGAHELA, RIVER, PA & WV.....	35050	660	730	230	31360
SWG	CORPUS CHRISTI SHIP CHANNEL, TX (1968 .. ACT).....	58500	40055	7000	8042	3403
SWG	FREEPORT HARBOR, TX.....	70153	3648	5900	56405	C
SWG	MOUTH OF COLORADO RIVER, TX.....	29600	14280	4700	10620	C
NAO	NORFOLK HARBOR AND CHANNELS, VA (55-FT . DEEPENING).....	154460	2800	10000	11960	129700
ORH	GALLIPOLIS LOCKS & DAM, WV & OH.....	176500	2250	3500	170750	C

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CONTINUING CONSTRUCTION PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
NAVIGATION (CONTINUED)						
CHN	WINFIELD LOCK AND DAM, WV	64000	0	1750	395C	5830C
	TOTALS	6846689	2606239	369886	1569796	2300768
	# OF PROJECTS			(41)		

CONTINUING CONSTRUCTION PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
BEACH EROSION						
SAJ	BROWARD COUNTY, FL (REIMBURSEMENT)	18500	11033	4000	400	3067
SAJ	DUVAL COUNTY, FL	16000	9319	3200	2481	C
SAJ	PALM BEACH COUNTY, FL (REIMBURSEMENT)	10900	4221	1700	C	4975
SAJ	PINELLAS COUNTY, FL	19100	4210	1600	1C700	259C
SAS	TYBEE ISLAND, GA	5635	3630	2005	C	C
NCB	PRESQUE ISLE PENINSULA, PA	16291	12571	1210	2510	C
NAO	VIRGINIA BEACH, VA (REIMB)	5500	4420	53C	55C	C
	TOTALS	91926	49404	14265	17641	1C634
	# OF PROJECTS			(7)		

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CONTINUING CONSTRUCTION PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL						
NPA	CHENA RIVER LAKES, AK	209000	200208	7000	1792	0
NPL	PHOENIX ARIZONA AND VICINITY, AZ (STAGE 2)	232000	62757	32000	137243	0
SPK	CORTE MADERA CREEK, CA	14000	8995	2000	2003	0
SPK	DRY CREEK (WARM SPRINGS) LAKE, CA	343000	253435	11000	3400	35165
SPK	FAIRFIELD VICINITY STREAMS, CA	9630	1867	3000	4763	0
SPK	LOWER SAN JOAQUIN RIVER, CA	5600	3150	1500	950	0
SPK	MERCED COUNTY STREAMS, CA	57900	6270	3000	48630	0
SPK	SACRAMENTO RIVER FLOOD CONTROL PROJECT, CP (DEF CORR)	74950	65475	300	5175	0
SPK	SACRAMENTO RIVER, CHICO LANDING TO RED BLUFF, CA	30000	10895	600	0	18505
SPK	SACRAMENTO RIVER AND MAJOR AND MINOR TRIBUTARIES, CA	11900	11551	200	149	0
SPK	SACRAMENTO RIVER BANK PROTECTION PROJECT, CA	90000	54846	7000	27200	954
SPL	SWEETWATER RIVER, CA	24600	13125	7200	4275	0
SPK	WALNUT CREEK, CA	62800	44176	11100	7524	0
SPK	WILDCAT AND SAN PABLO CREEKS, CA	17600	3130	4000	10470	0
NPO	CHATFIELD LAKE, CO	95600	93299	1400	901	0
SAJ	CENTRAL & SOUTHERN FLORIDA, FL	767000	256756	15000	136044	316200
SAJ	DADE COUNTY, NORTH OF HALLOVER BEACH PARK, FL	13000	800	6000	1300	4900
SAJ	DADE COUNTY, FL	48600	33744	2000	12856	0
SAJ	FOUR RIVER BASINS, FL	187000	69621	1200	1300	114879
POD	KANOPA STREAM, MAUI, HI	16800	969	6500	9331	0
NCR	AMES LAKE, IA	56100	1307	250	850	53693
NCR	BETTENDORF, IA	14500	12882	1618	0	0
NCR	DES MOINES RECREATICA RIVER AND GREENBELT (DRAG), IA	4750	250	350	4150	0
NRK	MISSOURI RIVER LEVEE SYSTEM, IA, NE, KS, & MO	248000	99808	800	3310	134082

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CONTINUING CONSTRUCTION PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL (CONTINUED)						
LMS	KASKASKIA ISLAND DRAINAGE AND LEVEE DISTRICT, IL	13200	8750	2300	2150	0
LPS	PALUSEE TERRE DRAINAGE & LEVEE DISTRICT, IL	1100	600	500	0	0
NCR	ROCKFORD, IL	10140	8754	950	436	0
ORL	EVANSVILLE, IN	49800	28686	4500	16614	0
CRN	BIG SOUTH FORK NATIONAL RIVER AND RECREATION AREA, KY & TN	103522	89659	9900	4863	0
ORL	SOUTHWESTERN JEFFERSON COUNTY, KY	57500	42521	7500	7479	0
LPN	GRAND ISLE & VIC,LA SEC 201, 1976 ACT	10343	9343	1000	0	0
LPN	LAKE PONTCHARTRAIN AND VICINITY, LA (HURRICANE PROTECTION)	511000	121108	14000	311288	26604
LPA	LAROSE TO GOLDEN MEADOW, LA (HURRICANE PROTECTION)	64000	41417	2500	15083	0
LMN	NEW ORLEANS TO VENICE, LA (HURRICANE PROTECTION)	164000	54389	3000	106611	0
LMK	PEARL RIVER, SLIDELL, ST. TAMMANY PARISH, LP	17742	470	750	16522	0
NCS	BASSETT CREEK, MN	26000	2100	6000	17900	0
NCS	MANKATO AND NORTH MANKATO, MN	95200	77671	8800	8929	0
NRK	BLUE RIVER CHANNEL, MO	141000	17248	6000	45852	51900
MRK	LITTLE BLUE RIVER LAKES, MO	137000	131558	3800	1642	0
MRK	LONG BRANCH LAKE, MO	20453	17806	500	0	2147
SAM	TOMBIGBEE RIVER AND TRIBUTARIES, MS & AL	50000	12709	4900	12262	20129
SAW	B. EVERETT JORDAN DAM AND LAKE, NC	136000	111649	8700	15651	0
SAW	FALLS LAKE, NC	168000	136821	6500	24679	0
NCS	LAKE OAHE, SOURIS RIVER, ND	59200	5430	2000	49750	0
MRO	MISSOURI NATIONAL RECREATIONAL RIVER, NE AND SD	21000	1004	1000	18996	0

CONTINUING CONSTRUCTION PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL (CONTINUED)						
PRO	PAPILLION CREEK AND TRIBUTARIES LAKES, NE	48000	43221	2000	2779	C
NAN	LIBERTY STATE PARK LEVEE AND SEAWALL, NJ	19000	312	5000	13688	C
NAN	ARDSLEY, NY	4430	545	2000	1885	C
NCW	ELLICOTT CREEK, NY	13500	3180	3000	7320	C
CRL	PILL CREEK, OH	156000	41358	15000	99642	C
ORH	HEWARK, OH	9600	6160	2500	940	C
SWT	ARCADIA LAKE, OK	84300	72794	5900	5606	C
NPP	LOWER COLUMBIA RIVER BASIN BANK PROTECTION, OR & WA	25400	19450	1500	2200	2250
NPP	WILLAMETTE RIVER BASIN BANK PROTECTION, OR	29800	24741	1500	1200	2359
NAB	COWANESQUE LAKE, PA (MODIFICATION)	2690	2220	470	0	C
CNP	TURTLE CREEK PA	17651	15416	300	1935	C
SAJ	PORTUGUES AND BUCANA RIVERS, PR	317000	140226	31000	145774	C
SWG	CLEAR CREEK, TX	78141	4236	8200	65705	C
SWF	COLORADO RIVER AND TRIBUTARIES, BOGGY CREEK AUSTIN TX	15800	300	900	14600	C
SWF	COOPER LAKE AND CHANNELS, TX	140000	27620	3700	101946	6734
SWA	EL PASO, TX	72700	57779	500	11098	3323
SWF	JOE POOL LAKE, TX	190000	161270	5700	19030	C
SWF	RAY ROBERTS LAKE, TX	282000	159695	34000	48305	C
SWF	SAN ANTONIO CHANNEL IMPROVEMENT, TX	87300	40101	11600	35595	C
SWF	SAN GABRIEL RIVER, TX	160000	101782	600	0	57618
SWG	TAYLORS BAYOU, TX	52700	15743	8600	28357	C
SWG	VINCE AND LITTLE VINCE BAYOUS, TX	19600	15308	2800	1492	C
SPK	LITTLE BELL LAKE, CA	50300	4250	2900	43150	C
NAO	RICHMOND, VA	72200	1640	1200	69360	C

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CONTINUING CONSTRUCTION PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL (CONTINUED)						
NAO	VIRGINIA BEACH STREAMS, CANAL NO. TWO, VA	4600	920	2200	1480	0
NPP	PT ST HELENS & VICINITY, WA (INTERIM MEASURES)	51558	41558	10000	0	0
ORH	LEWISA/TLG FORKS OF BIG SANDY & UPPER CUMBERLAND RVRS, KY, VA, TN	247000	81419	22500	143081	0
CRH	A B BAILEY LAKE, MS	250000	215972	33000	0	1028
ORP	STONEWALL JACKSON LAKE WV	206000	158710	26000	21290	0
	TOTALS # OF PROJECTS	7197800	3870757	427788 (74)	2007783	848472

CONTINUING CONSTRUCTION PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
MULTIPLE PURPOSE						
NPA	SHETTISHAP, AK	139000	111020	10800	17180	0
SPK	NEW MELONES LAKE, CA	382000	347238	1900	0	32762
SAS	RICHARD B. RUSSELL DAM AND LAKE, GA & SC	541000	437390	25000	78610	0
NRK	HARRY S. TRUMAN DAM AND RESERVOIR, MO	550000	525490	2500	13352	8658
NPP	BONNEVILLE SECOND POWERHOUSE, OR & WA	663000	642693	7500	12807	0
NPS	CHIEF JOSEPH ADDITIONAL UNITS, WA	387000	362664	6000	0	18336
NPW	LOWER SNAKE RIVER FISH AND WILDLIFE COMPENSATION, WA, OR & ID	177000	114964	14000	32380	15654
	TOTALS # OF PROJECTS	2839000	2541561	67700 (7)	154325	75610

MISSISSIPPI RIVER & TRIBUTARIES
CONTINUING CONSTRUCTION PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL						
MRT	CHANNEL IMPROVEMENT, AR, IL, LA, MS, MO, & TN	3010000	1510429	75100	1424471	0
PTM	EIGHT MILE CREEK, AR	7570	350	350	5168	1702
MTM	MISSISSIPPI RIVER LEVEES, AR, IL, KY, LA, MS, MO, TN	1229000	562594	21700	644706	0
PTM	ST. FRANCIS BASIN, AR, MO	361000	246963	5200	104837	0
MTV	TENSAS BASIN, AR & LA	443707	230829	5600	147108	60170
PTM	WEST KENTUCKY TRIBS, KY	20955	1515	100	0	19336
PTM	ATCHAFALAYA BASIN, FLOODWAY SYSTEM, LA	131875	450	970	24810	105645
PTM	ATCHAFALAYA BASIN, LA	1433000	529182	35600	868218	0
MTM	BAYOU COCODRIE AND TRIBUTARIES, LA	19839	4924	75	200	14660
MTM	OLD RIVER, LA	301300	286471	14829	0	0
MTV	YAZOO BASIN, MS	1290500	445967	24000	741992	78541
PTM	WEST TENNESSEE TRIBUTARIES, TN	104000	33541	3500	62959	0
	TOTALS	8352746	3855219	193024	4024469	280034
	# OF PROJECTS			(12)		

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PAJCB REHABILITATICN PRCJECTS IN FY-87 BUDGET

(THCLSANDS CF DCLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPRCVED BUDGET	SCHEDLLED BALANCE TC COMPLETE	UNSCHEDULED BALANCE TC COMPLETE
NAVIGATION						
ACR	BRANDON ROAD LOCK AND DAM, ILLINOIS RIVER, IL (REHAB)	24400	17380	5470	1550	C
CRL	LOCKS AND DAM 53, IL & KY (REHAB)	9240	5229	1700	2311	C
ORP	MONTGOMERY LOCKS AND DAMS, OHIO RIVER, PA (REHAB)	33200	14150	8300	10750	C
	TOTALS # OF PROJECTS	66840	36759	15470 (3)	14611	C

PAJCB REHABILITATICN PRCJECTS IN FY-87 BUDGET

(THCLSANDS CF DCLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPRCVED BUDGET	SCHEDLLED BALANCE TC COMPLETE	UNSCHEDULED BALANCE TC COMPLETE
FLOCD CONTRCL						
SPL	LOS ANGELES COUNTY DRAINAGE AREA, CA (REHAB)	29700	19220	8900	1580	C
ORH	MUSKINGUM RIVER LAKES, OH (REHAB)	24900	20181	2500	2219	C
	TOTALS # OF PROJECTS	54600	39401	11400 (2)	3799	C

DAM SAFETY ASSURANCE PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL						
SWA	JEMEZ CANYON DAM, NM (DAM SAFETY ASSURANCE)	3060	1000	2060	0	0
SWG	BUFFALO BAYOU AND TRIBS-ADDICKS & BARKER DAMS (DAM SAFETY), TX	14600	3000	4900	6700	0
NPS	PUD MOUNTAIN DAM, WY (DAM SAFETY ASSURANCE)	23800	1300	4000	18500	0
	TOTALS # OF PROJECTS	41460	5300	10960 (3)	25200	0

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
MULTIPLE PURPOSE						
ORH	BARKLEY DAM & LAKE BARKLEY, KY & TN (DAM SAFETY ASSURANCE)	16200	1200	3000	12000	0
	TOTALS # OF PROJECTS	16200	1200	3000 (1)	12000	0

MISSISSIPPI RIVER & TRIBUTARIES
DAM SAFETY ASSURANCE PROJECTS IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL						
MTV	SARDIS DAM, MS (DAM SAFETY ASSURANCE)	9000	700	3500	4800	0
	TOTALS # OF PROJECTS	9000	700	3500 (1)	4800	0

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CONSTRUCTION PROJECTS NOT IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
NAVIGATION						
SAM	MOBILE HARBOR THEODORE SHIP CHANNEL,AL..	64600	53700	0	C	10900
SAM	TENNESSEE - TOMBIGBEE WATERWAY, AL, MS..	1820000	1716425	0	C	103575
SPL	PORT SAN LUIS, SAN LUIS OBISPO HARBOR, . CA.....	11400	720	0	0	10680
SPL	SAN DIEGO RIVER & MISSION BAY,CA.....	20200	11974	0	0	8226
SPN	SANTA CRUZ HARBOR,CA.....	4202	1972	0	0	2230
NAP	INW DEL R TO CHES BAY C&D CANAL PT II .. 1954ACT.....	141000	99852	C	C	41148
SAJ	CROSS FLORIDA BARGE CANAL,FL 1962 ACT...	179000	62842	0	C	116158
SAJ	HILLSBORO INLET (BROWARD COUNTY), FL....	330	0	0	C	330
SAJ	PORT EVERGLADES HARBOR,FL -SEC 201, ... 1974.....	35800	34100	C	C	1700
SAJ	TAMPA HARBOR - MAIN CHANNEL,FL 1970 ACT.	172500	164657	0	C	7843
POD	MAALAEA SMALL BOAT HARBOR, HAWAII.....	4610	0	0	C	4610
NCC	CALUMET HARBOR & RIVER,IL 1962, 65 ACTS.	29400	7130	0	C	22270
LMS	KASKASKIA RIVER NAVIGATION,IL.....	141000	141000	C	C	C
CRL	NEW ALBANY LOCKS & DAM,IN,KY 1909 ACT.....	105266	104498	0	C	768
NED	FALL RIVER HARBOR, MA,RI 1968 ACT.....	42000	1600	0	C	40400
NCE	GREAT LAKES CONNECT.CHANLS,MI 1946, 54 . ACTS.....	144000	129727	0	C	14273
LMK	YAZOO RIV-BELZONI BRDG,MS(ADV PART) .... 1968.....	8570	7970	0	C	600
SAW	ALBW MASONBORO INLET,NC 1950 ACT.....	10800	8100	0	C	2700
SAW	ALBW-REPL FED HWY BRIDGES,NC 1970,76 ... ACTS.....	45800	18373	0	C	27427
SAW	PANTEO (SHALLOWBAG) BAY,NC 1970 ACT.....	103000	6090	C	C	96910
NAP	DEL RIV PHILA-TO-SEA ANCHOR.,PA,NJ 1958. ACT.....	79500	8807	0	C	70693

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CONSTRUCTION PROJECTS NOT IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
NAVIGATION	(CONTINUED)					
SWG	WALLISVILLE LAKE TRINITY RIV 1962 ACT .. MO.....	67700	25730	0	0	41970
NCE	KENOSHA HARBOR,WI 1962 ACT.....	600	300	0	0	300
	TOTALS # OF PROJECTS	3231278	2605567	0 (23)	0	625711

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CONSTRUCTION PROJECTS NOT IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
BEACH EROSION						
SPL	SURFSIDE-SUNSET-NEWPORT BEACH, CA.....	29400	9722	0	0	19678
NED	SILVER BEACH TO CEDAR BEACH,CT 1954 .... ACT(REIMB).....	225	63	0	0	162
SAJ	BREVARD COUNTY,FL 1968 ACT.....	7550	2346	0	0	5204
SAJ	FORT PIERCE BEACH,FL 1965, CB ACT-REIMB.	3100	1175	0	0	1925
SAJ	MULLET KEY, FL 1966 ACT.....	960	436	0	0	524
SAJ	VIRGINIA KEY & KEY BISCAYNE,FL 1962 ACT.	4620	1667	0	0	2953
POD	WAIKIKI BEACH OAHU HI 1965 ACT.....	10640	513	0	0	10127
NED	LYNN-NAHANT BEACH,MA 1954 ACT (REIMB)...	1375	820	0	0	555
NED	PLYMOUTH-DUXBURY BEACH,MA 1960 ACT (REIMB)..	250	6	0	0	244
NED	TOWN NECK BEACH,MA 1960 ACT (REIMB).....	600	0	0	0	600
NED	WINTHROP BEACH,MA 1960 ACT (REIMB).....	575	177	0	0	398
SAM	FORT MACON STATE PARK,NC 1962 ACT - .... REIMB.....	1800	620	0	0	1180
NAN	PERTH AMBOY,NJ 1965 ACT - REIMB.....	82	0	0	0	82
NAN	E ROCKAWAY INL-ROCKAWAY INL & JAMAICA .. BAY,NY.....	25900	17900	0	0	8000
NAN	FIRE ISLAND INLET-JONES INLET,NY 1962 .. ACT.....	34000	9312	0	0	24688
	TOTALS	121077	44737	0	0	76320
	# OF PROJECTS			(15)		

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CONSTRUCTION PROJECTS NOT IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL						
SPL	LYTLE & LAMP CREEKS, CA	37600	37600	0	0	0
SPL	SANTA PAULA CREEK CHANNEL, CA	36200	4791	0	0	31409
SWA	FOUNTAIN CREEK AT PUEBLO, COLORADO	5910	0	0	0	5910
NAP	DELAWARE COAST PROTECTION,DE,1968 ACT	127000	1639	0	0	125361
NCR	SAYLORVILLE LAKE,IA 1958 ACT	123196	110495	0	0	12701
LMS	ALTON TO GALE ORGANIZED LEVEE DISTRICTS, IL&MO	8500	1954	0	0	6546
LPS	EAST ST LOUIS & VIC,IL	32700	14745	0	0	17955
LPS	MCGEE CREEK BASIN, IL	25500	24920	0	0	580
LPS	WOOD RIVER DRAINAGE AND LEVEE DISTRICT, IL	18600	16590	0	0	2010
ORL	CAVE RUN LAKE,KY 1938,38 ACTS	79613	73862	0	0	5751
ORH	PAINTSVILLE LAKE, KY	60450	57783	0	0	2667
ORL	TAYLORSVILLE LAKE,KY 1966 ACT	92225	81296	0	0	10929
ORH	YATESVILLE LAKE, KY	90900	51045	0	0	39855
LMK	BAYOU BODCAU & TRIBS,LA 1965 ACT	25100	5572	0	0	19528
LPA	MORGAN CITY & VIC,LA 1965 ACT	27000	2055	0	0	24945
NCE	BATTLE CREEK,MI 1954 ACT	14400	4363	0	0	10037
NCE	KALAMAZOO,MI 1958 ACT	29100	422	0	0	28678
NCS	ROSEAU RIVER,MN 1965 ACT	29700	2128	0	0	27572
PRX	LITTLE BLUE RIVER CHANNEL, PO 1968 ACT	26067	26067	0	0	0
LMS	PERRY CO DEL DISTS 1,2,3,MO SEC 201, 1972	8760	7969	0	0	791
LMK	PEARL RIVER VICINITY OF JACKSON, MS	26500	7051	0	0	19449
SAM	TALLAHALA CREEK LAKE,MS 1968 ACT	120000	3946	0	0	116054
SAS	BRUNSWICK CO BCHS-LCAG BCH PORTION-1946, ACT BERM AND DUNE	31300	302	0	0	30998

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CONSTRUCTION PROJECTS NOT IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL	(CONTINUED)					
SAM	CAROLINA BEACH HURR PROT,NC 1962 ACT....	15111	7898	0	0	7213
SAW	RANDLEMAN LAKE,NC 1968 ACT.....	111400	4171	0	0	107229
NAN	RARITAN & SANDY HOOK BAYS, NJ 1962 ACT.. REIMB.....	9050	7793	0	0	1257
SWA	ALBUQUERQUE DIVERSION CHANNEL ..... (DEFICIENCY CORRECTION).....	22550	17270	0	0	5280
NAB	BINGHAMTON,NY.....	3320	2952	0	0	368
NAN	FIRE ISL INL - MONTAUK POINT,NY ..... 1960/74 ACTS.....	222000	10428	0	0	211572
ORL	CAESAR CREEK LAKE,OH, 1938,58, 61 ACTS..	64781	62894	0	0	1887
NCO	CUYAHOGA RIVER BASIN,OH 1970 ACT.....	20700	1117	0	0	19583
ACO	POINT PLACE, OHIO SEC 201 AUTH 1972.....	9620	8149	0	0	1471
ORL	WILLIAM H HARSHA LAKE 1938,..... 1958&1961ACTS.....	54961	52023	0	0	2918
SWT	COPAN LAKE,OK,KS 1962 ACT.....	89242	85735	0	0	3507
SWT	LUKFATA LAKE, OK 1958 ACT.....	39900	1425	0	0	38475
SWT	PARKER LAKE, OK.....	44498	300	0	0	44198
SWT	SARDIS LAKE OKLAHOMA.....	65928	58303	0	0	7625
SWT	SKIATOOK LAKE OK.....	112595	103595	0	0	9000
NPP	ELK CREEK LAKE OR.....	119000	54867	0	0	64133
ORP	CHARTIERS CREEK,PA 1965 ACT.....	32700	26586	0	0	6114
NAB	TIOGA-HAMMOND LAKES,PA.....	188980	185650	0	0	3330
NAB	WYOMING VALLEY,PA.....	27900	25505	0	0	2395
SWT	ARK-RED RIV ESHS CHLCR CONT,TX-AREA .... VIII.....	50690	46290	0	0	4400
SWG	BUFFALO BAYOU & TRIBS,TX 1938, 65 ACTS..	127000	57206	0	0	69794
LMK	RED RIVER BELOW DENISON DAM.....	59650	59650	0	0	0
NCS	LAFARGE LAKE & CHANNEL IMPRV,,WI 1962 .. ACT.....	81800	18642	0	0	63158

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CONSTRUCTION PROJECTS NOT IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL (CONTINUED)						
ORH	BEECH FORK LAKE, W.VA.	42400	41842	0	0	558
ORH	TUGALEVIER FORKS & CUMBERLAND RIVER (ACNSTR).	38000	21000	0	0	17000
	TOTALS	2730077	1497886	0	0	1232191
	# OF PROJECTS			(48)		

CONSTRUCTION PROJECTS NOT IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
MULTIPLE PURPOSE						
SAM	SPELLELL BLUFF LAKE GA 1963 ACT.	424500	2170	0	0	422330
SAM	WEST POINT LAKE GA & ALA 1962 ACT.	133900	131546	0	0	2354
LPS	CLARENCE CANNON DAM & MARK TWAIN LAKE, MO.	330000	311199	0	0	18801
PRK	STOCKTON LAKE,MO 1954 ACT.	79900	79256	0	0	644
SWT	EUFALLA RESERVOIR.	122727	122337	0	0	390
NPP	BONNEVILLE PWR UNITS OR & WA.	19700	6	0	0	19694
NPP	JOHN DAY LOCK & DAM UMATILLA OR & WA.	512000	511000	0	0	1000
POD	NANFIL RIVER HYDROPOWER, POWAPE, TTPI.	8000	6074	0	0	1926
	TOTALS	1630727	1163588	0	0	467139
	# OF PROJECTS			(8)		

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MISSISSIPPI RIVER & TRIBUTARIES
CONSTRUCTION PROJECTS NOT IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL						
PTM	CACHE BASIN AR 1950 ACT	153000	8335	0	C	144665
PTV	LOWER ARKANSAS RIVER, AR SOUTH BANK	20700	15676	0	C	5024
PTM	SECTION C LEVEES,AR,LA,IL,MS,MO	4000	3745	0	C	255
PTV	LWR RED RIV-SOUTH BANK LEVEES,LA 1928, 41,65	28700	18495	0	C	10205
PTV	TENSAS-BAT WILDLIFE REFUGE, LA	40000	37600	0	C	2400
PTV	TB-GREENWOOD	31300	12175	0	C	19125
PTV	TB-GRENADA LAKE	50500	46872	0	C	3628
PTV	TB-LOWER YAZOO PROJECTS	376572	46845	0	0	329727
PTV	TB-WILL M WHITTINGTON AUX CHAN	11636	10951	0	C	685
PTM	MUD LAKE PUMPING STATION	4370	457	0	C	3913
PTM	REELFOOT LAKE-LAKE AC 9,TN,KY,SEC 201, 1970	10300	8365	0	C	1935
	TOTALS # OF PROJECTS	731078	209516	0 (11)	C	521562

MAJOR REHABILITATION PROJECTS NOT IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
NAVIGATION						
NCE	MUSKEGON HARBOR,MI MAJOR REHABILITATION	9800	6900	0	C	2900
	TOTALS # OF PROJECTS	9800	6900	0 (1)	C	2900

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DAM SAFETY ASSURANCE PROJECTS NOT IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
FLOOD CONTROL						
SWL	CLEARWATER DAM NO (DSA) SPILLWAY MODIFICATION	19000	0	0	0	19000
SWA	COCHITI LAKE NEW MEXICO DAM SAFETY	28500	0	0	0	28500
ORH	MUSKINGUM RIVER LAKES, OHIO (DAM SAFETY)	62800	6880	0	0	55920
	TOTALS # OF PROJECTS	110300	6880	0 (3)	0	102420

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DAM SAFETY ASSURANCE PROJECTS NOT IN FY-87 BUDGET

(THOUSANDS OF DOLLARS)

DIST	PROJECT NAME	TOTAL EST. FEDERAL COST	ALLOCATIONS TO DATE	APPROVED BUDGET	SCHEDULED BALANCE TO COMPLETE	UNSCHEDULED BALANCE TO COMPLETE
MULTIPLE PURPOSE						
SWT	TENKILLER FERRY LAKE, OKLAHOMA (DAM SAFETY)	25000	0	0	0	25000
SAC	COOPER RIVER SEISMIC MODIFICATION	8200	2350	0	0	5850
	TOTALS # OF PROJECTS	33200	2350	0 (2)	0	30850

CORPS REQUEST TO OMB

Mr. BEVILL. Prepare for the record the amounts the Corps requested from OMB.
Mr. DAWSON. We can provide that.
[The information follows:]

FISCAL YEAR 1987 RECOMMENDATIONS TO OMB

[Dollars in thousands]

Appropriation title	Amount	Approved budget
General investigations	127,000	127,000
Construction, general	[1] 1,146,000	[1] 1,072,500
Operation and maintenance	[2] 1,420,000	[2] 1,420,000
General expenses	115,000	115,000
Flood control, MR&T	298,000	298,000
Flood control, coastal emergencies	25,000	25,000
Permanent appropriations	9,000	9,000
Revolving fund	12,000	12,000
Grand total	3,152,000	3,078,500

[1] Includes $26,000,000 appropriated from the Inland Waterway Trust Fund.
[2] Includes $203,000,000 from the proposed Harbor Maintenance Trust Fund.

SMALL PROJECTS PROGRAMS

Mr. BEVILL. Provide for the record a listing of the Small Projects Programs indicating the current year appropriation, the amount allocated, the fiscal year 1987 budget request and the amount required to complete the project.

General HEIBERG. Yes; we can provide that. However, you should be aware of the dynamic nature of these programs. The values shown represent the Corps of Engineers estimate as of February 18, 1986. As studies proceed and costs and benefits are determined, and local interests' willingness and ability to pay are clarified, some activities will be terminated and others not listed may be initiated. Furthermore, we are managing each program to insure that only projects having predominately flood control and commercial navigation outputs proceed to construction.

[The information follows:]

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ACTUAL AND PENDING ALLOCATION FOR SMALL PROJECTS PROGRAMS
(Funds Shown in $1,000)

Program/Category/Item	Fiscal Year 1986	Fiscal Year 1987
SNAGGING AND CLEARING (Section 208)		
Initial Appraisals	55	65
Reconnaissance Studies	200	215
Detailed Project Studies		
Plans and Specifications		
Boligee Canal, Boligee, AL	18	
Edwards River, New Boston, IL	5	
Pigeon Creek, Vanderburg Co., IN	20	
Little Wabash River, Wayne City, IN		20
Pleasant Creek, Johnson Co., IN		20
Cypress Creek, Marshall Co., KY	20	
Indian Creek, Wyoming Co., WV	7	
Projects Not Yet Identified	50	100
Subtotal P&S	120	140
Construction		
Boligee Canal, Boligee, AL	100	100
Konkapot, North Canan, CT		107
Edwards River, New Boston, IL	65	
Lick Creek, Hartford City, IN	100	48
Salamonie River, Montpelier, IN	146	
Pigeon Creek, Vanderburg Co., IN		140
Cypress creek, Marshall Co., KY	150	
Hatchie River, Alcorn Co., MS	11	
Owyhee River, Malheur Co., OR	68	
Brushy Creek, Greenville, SC	110	
Indian Creek, WV		60
Projects Not Yet Identified		225
Subtotal Construction	750	680
Contingencies	75	100
TOTAL PROGRAM (Section 208)	1,200	1,200
Reduction per Graham-Ruddman-Hollings Act	(-) 52	1/
Revised Total Program (Section 208)	1,148	1/

1/ Estimated Fiscal Year 1987 not assigned

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ACTUAL AND PENDING ALLOCATION FOR SMALL PROJECTS PROGRAMS
(Funds Shown in $1,000)

Program/Category/Item	Fiscal Year 1986	Fiscal Year 1987
MITIGATION FOR NAVIGATION PROJECTS (Section 111)		
Initial Appraisals	10	10
Reconnaissance Studies	60	60
Detailed Project Studies		
Charleston Harbor, SC		60
Plans and Specifications		
Charleston Harbor, SC		100
Construction		
Herring Creek, Tall Timbers, MD	780	70
Total Program (Section 111)	850	300
Reduction per Graham-Ruddman-Hollings Act	(-)37	1/
Revised Total Program (Section 111)	813	1/

1/ Estimated Fiscal Year 1987 reduction not assigned.

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ACTUAL AND PENDING ALLOCATION FOR SMALL PROJECTS PROGRAMS
(Funds Shown in $1,000)

Program/Category/Item	Fiscal Year 1986	Fiscal Year 1987
BEACH EROSION (Section 103)		
Initial Appraisals	35	50
Reconnaissance Studies	120	200
Detailed Project Studies		
Prospect Beach, West Haven, CT	55	
Town Beach, Old Saybrook, CT	10	
West Haven Beaches, CT	10	
Crooked River State Park, GA		40
Conimicut Point, Warwick, RI	80	
Projects Not Yet Identified		110
Subtotal DPS	155	150
Plans and Specifications		
North Shore, Indian River Inlet, DE	63	
South Shore, Indian River Inlet, DE	63	
Boca de Cangrejos, PR		50
Projects Not Yet Identified	100	250
Subtotal	226	300
Construction		
Boggy Bayou Shoreline, Valparaiso, FL		100
Dunedin Bay Shoreline, FL	300	
Ft. Clinch, Nassau Co., FL	300	400
Key Biscayne, Miami, FL	690	110
Landon Park, Wilmette, IL	190	
Lake Shore Park, Ashtabula, OH	70	
Boca de Cangrejos, PR		600
Projects Not Yet Identified		90
Subtotal Construction	1,550	1,300
Contingencies	64	100
Total Program (Section 103)	2,150	2,100
Reduction per Graham-Ruddman-Hollings Act	(-) 92	1/
Revised Total Program (Section 103)	2,058	1/

1/ Estimated fiscal year 1987 reductions not assigned.

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ACTUAL AND PENDING ALLOCATION FOR SMALL PROJECTS PROGRAMS
(Funds Shown in $1,000)

Program/Category/Item	Fiscal Year 1986	1987
EMERGENCY STREAMBANK AND SHORELINE PROTECTION (Section 14)		
Initial Appraisals	600	800
Plans and Specifications		
Tennessee River, Sheffield, AL	31	
Lake Eufaula, Alabama State Docks, AL	16	
Nazline Wash, Chinle, AZ	43	
Marina County (WWTP), Marina, CA	10	
Waiehu Beach Park, Maui, HI	18	
Big Sioux River, Sec. 32, Plymouth Co., IA	12	
Lake Michigan, Beverly Shores, Road, IN	15	
Lake Michigan, Berger Park, IL	17	
Little Blue River, Marshall County (FAS RD. 1108), KS	11	
Shallow Creek, MD	50	
Cass River, Bridgeport Charter Township, MI	34	
Nodaway River, Andrew Co., MO	13	
Goodfood Creek, Chickasaw Co., MS	15	
Martin Creek, Prentiss Co., MS	15	
Tallabinnela Creek, Chickasaw Co., MS	18	
Houston School Road Bridge, MS	20	
Big Brown Creek, Marietta - Hazeldell Road Bridges, MS	40	
Vernon Branch Bridge, Columbus, MS	20	
Blackbird Creek, Burt Co., NE	7	
Turkey Creek, Fillmore Co. (BR. 297), NE	13	
Turkey Creek, Fillmore Co. (BR. 123), NE	13	
Little Blue River, Pimpel Bridge, NE	13	
Little Blue River, Overy Bridge, NE	13	
Green Brook, Warrenville, NJ	25	
Green Brook, Green Brook, NJ	25	
Canipa Creek, Acoma Pueblo, NM	14	
Perkiomen Creek, Berks Co., PA	19	
Tunkhannock Creek, Tunkhannock, PA	36	
Darby Creek, Lansdowne Borough, PA	42	
Barrio Barrero, Rincon, PR	10	
El Terraplen, Highway 187, PR	10	
Clear River, Burrillville, RI	35	
Lewis Branch, Houston Co., TN	30	
Tennessee River(Mile 650), Downtown IS. Airport, Knoxville, TN	26	
Monongahela River, Monongahela Co., Granville, WV	16	
Projects Not Yet Identified		1,000
Subtotal P&S	745	1,000

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ACTUAL AND PENDING ALLOCATION FOR SMALL PROJECTS PROGRAMS
(Funds Shown in $1,000)

Program/Category/Item	Fiscal Year 1986	1987
EMERGENCY STREAMBANK AND SHORELINE PROTECTION Section 14		
Construction		
Lake Eufaula, Alabama State Docks, AL		108
Kuskokwin River, Bethel, AK	228	
White River, Batesville, AR	82	
Ofu Airstrip, Ofu, AS	25	
Nazline Wash, Chinle, AZ	200	
Flowing Wells Road, Tucson, AZ	180	
Amado Bridge, Tubac, AZ	150	
South Platte River, Balzac, CO	35	
Fountain Creek, Pueblo, CO		70
Fourth Street Bridge, Canon City, CO		65
South Platte River, Morgan Co., CO	48	
South Platte River, Weldona, CO	60	
South Platte River, Goodrich, CO	75	
Gulf Street and Trumbull Ave, CT	130	
Farmington River, Simsbury, CT		200
Waiehu Beach Park, Maui, HI		130
Big Sioux River, Plymouth Co. (Section 32), IA	75	
Big Sioux River, Plymouth County (Section 4), IA	60	
Ohio River, Ft. Massac State Park, IL	100	
Lake Michigan, Berger Park, IL	170	
Lake Michigan, Beverly Shores, Road, IN	176	
Little Blue River, Marshall County Rd, KS	50	
Green River, Calhoun, KY	38	
South River, Conway, MA		100
Shallow Creek, MD		200
Machias River, Machias, ME		180
Mississippi River, Warner Road, MN	100	
Nodaway River, Andrew Co., MO	132	
North River, Marion Co., MO	134	
Kimsey Creek, Holt Co., MO	60	
Nodaway River, Holt Co., MO	90	
Osage River, Miller Co., MO	120	
Big Brown Creek and Tributary, Marietta-Hazeldell Road Bridges, MS	190	
Goodfood Creek Bridge, Chickasaw Co., MS	58	
Vernon Branch Bridge, Columbus, MS		180
Houston School Road Bridge, MS		146
Martin Creek, Altitude Road Bridge, MS	94	
Tallabinella Creek, Paradise Valley Road Bridge, MS	55	
Noxubee River, MS	150	

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ACTUAL AND PENDING ALLOCATION FOR SMALL PROJECTS PROGRAMS
(Funds Shown in $1,000)

Program/Category/Item	Fiscal Year 1986	1987
EMERGENCY STREAMBANK AND SHORELINE PROTECTION Section 14		
CONSTRUCTION (cont'd)		
Bridgeport, MI	139	
Canipa Creek, Acoma Pueblo, NM		148
Watkins Glenn, NY	22	
Rosewood Beach, NY	225	
Lake Bluff, NY	225	
Bouquet River, Elizabethtown, NJ	232	
Greenbrook, Warrenville, NJ		40
Beaver Creek, Webster County Bridge (23025) NE	25	
Big Blue River, Tuxedo Bridge, Crete, NE	55	
Little Blue River Overy Bridge, NE	45	
Little Blue River, Pimpel Bridge, NE	53	
Turkey Creek, Bridge 123, Fillmore Co., NE	23	
Turkey Creek, Bridge 297, Fillmore Co., NE	30	
Turkey Creek, Bridge 385, Fillmore Co., NE	10	
Blackbird Creek, Burt Co., NE	30	
Elm Creek, Webster County Bridge (33425), NE	20	
Indian Creek, West Branch, Webster Co., Bridge(13225), NE	21	
Redbird Creek, Holt Co., NE	37	
Spring Ranch Bridge, Clay Co., NE	10	
Pawnee Ranch Bridge, Clay Co., NE	17	
Big Nemaha River, Richardson, Co., NE	20	
Platte River, Hansen Lake, NE	35	
Wigle Creek, Homer, NE	18	
Yankee Creek, Vesta Bridge, NE	17	
Yankee Creek, West Tecumseh Bridge, NE	27	
Elk Creek, Jackson, NE	50	
County Road B-060, Amalia, NM	80	
Rio Ruidoso Bridge, Lincoln Co., NM	60	
South Canadian River, Konowa, OK		192
Willow Creek (WWTP), Creede, OK		40
Caney River, Wash Co., OK		153
Lake Erie, Route 531, Geneva, OH	200	
Kirkland, OH	55	
Perkiomen Creek, Berks Co., PA	31	
Darby Creek, Lansdowne Borough, PA	100	68
Tunkhannock Creek, Tunkhannock, PA		113

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ACTUAL AND PENDING ALLOCATION FOR SMALL PROJECTS PROGRAMS
(Funds Shown in $1,000)

Program/Category/Item	Fiscal Year 1986	Fiscal Year 1987
EMERGENCY STREAMBANK AND SHORELINE PROTECTION Section 14		
CONSTRUCTION (cont'd)		
Barrio Barrero, Rincon, PR	90	
El Terraplen, Highway 187, PR	220	
Clear River, Burrillville, RI	90	
Vermillion River (WWTP), Vermillion, SD	21	
Nonconnah creek, TN	215	
Hammond Underwood, East Columbia, TX		150
Saxis Island, VA	150	77
Millbrook, Brownsville, VT		40
Barker Island, WI	25	
Lake Michigan, Port Washington, WI	175	
Projects Not Yet Identified		3,000
Subtotal Construction	5,963	5,400
Contingencies	92	300
TOTAL PROGRAM (Section 14)	7,400	7,500
Reduction per Graham-Ruddman-Hollings Act	(-) 403	1/
Revised Total Program (Section 14)	6,997	1/

1/ Estimated Fiscal Year 1987 reductions not assigned.

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ACTUAL AND PENDING ALLOCATION FOR SMALL PROJECTS PROGRAMS
(Funds Shown in $1,000)

Program/Category/Item	Fiscal Year 1986	1987
FLOOD CONTROL (Section 205)		
Initial Appraisals	500	600
Reconnaissance Studies	2,300	3,000
Detailed Project Studies		
Canal 43, Silver Lake, AR	20	
Cloverdale Drain, Little Rock, AR	100	
White River, Batesville, AR	30	
Fourteen Mile Slough, Stockton, CA	50	
Lake Elsinore, CA		180
Mission Zanja Creek, Redlands, CA	55	
Santa Clara River, Fillmore, CA	150	
Rialto Channel, Rialto, CA	150	170
Seminole Basin, Largo, FL	40	
Alligator Creek Basin, Clearwater, FL	35	
Placentia Canal, Savannah, GA	115	
Silver Creek, Rome, GA	10	
Springfield Canal, Savannah, GA	93	
Oelwein, Fayette County, IA	35	
Salmon River, Salmon, ID	20	
Fox River, IL	116	
Iroquois River & Sugar Creek, IL	75	
Wilmington, IL	105	
Pipe Creek, Alexandria, IN	55	
Lyford Levee, Tarkè Co., IN	110	
Lincoln Draw, Hays, KS	47	
Buckhorn Creek, Campbellsville, KY		80
Bayou Natchitoches, LA	200	68
Aroostook River, Ft. Fairfield, ME	110	
Ontonogan, MI	48	
Lake Pulaski, Buffalo County, MI	15	
Gilmore Creek, MN	60	
Pearl-Flowood, MS	32	
Magby Creek, Columbus, MS	20	
Greens Creek, Petal, MS	15	
Crooked Creek, Bollinger Co., MO		35
St. Peters, MO	195	
McKenzie Creek, MO	100	
Scott City, MO		75
English Coulee, Grand Forks, ND	75	
Scuppernong River, NC		63
Lower Heart River, Mandan, ND	58	
Neche, ND	20	
East Canada Creek, Dodeville, NY	62	
Delaware River, Port Jervis, NY	15	

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ACTUAL AND PENDING ALLOCATION FOR SMALL PROJECTS PROGRAMS
(Funds Shown in $1,000)

Program/Category/Item	Fiscal Year 1986	1987
FLOOD CONTROL (Section 205)		
Detailed Project Studies (Cont'd)		
Corklin-Broome (Ice Jam), NY	90	70
Keuka Lake Outlet, NY	70	
Lake Champlain Municipal Beach, NY	100	60
Butternut Creek, Dewitt, NY	110	
Great Coharie Creek, Sampson Co., NC	45	
Crab Tree Creek & Tributaries, Wake, Co., NC	195	
Elizabeth River, Hillside, NJ	25	
Muskingum River, Mansfield, OH	35	
Swan Creek, Toledo, OH	100	
Great Miami River, OH	20	
Landis Ditch, Rittman, OH	51	
Blacklick Creek, Franklin, Co., OH	150	
Sugar Creek, Bellbrook, OH	30	
Libby Dike, Coal Bank Slough, Coos Bay, OR	45	
Warrenton Diking District, OR	175	
Coal Creek, Henryetta, OK	100	
Merkle Creek, Norman, OK	60	
Mill Creek, Buck Co., PA		100
Hyndman, Bedford County, PA	200	
Rio Cibuco, Vega Baja, PR	151	
Socastee Creek, Horry Co., SC	45	
Browns Creek, Nashville, TN	20	
Richland and Sugartree Creeks, Davidson Co., TN		170
Limestone Creek, Davidson Co., TN		170
Dry Creek, Goodlettsville, TN	20	
Lorean Branch, Hurst, TX	15	
Lower Walnut Creek, Austin, TX	65	
Walnut Creek, Trib 7, Austin, TX	37	
Elm Fork, Gainesville, TX	50	
Little Walnut Creek, Austin, TX	66	
Burton Creek, Bryan, TX	86	
Missiquoi River, Richford, VT	20	
Elwha Klallam Reservation, Elwha River, WA	58	
Marsh Fork, Fairdale, WV	45	
N. Platte River, WY	13	
Projects Not Yet Identified		1,759
Subtotal DPS	4,728	3,000

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ACTUAL AND PENDING ALLOCATION FOR SMALL PROJECTS PROGRAMS
(Funds Shown in $1,000)

Program/Category/Item	Fiscal Year 1986	1987
FLOOD CONTROL (Section 205)		
Plans and Specifications		
Canal 43, Silver Lake, AR	45	
Mill Creek, AR	90	
Cribbs Mill Creek, Tuscaloosa, AL	40	
Fourteen Mile Slough, Stockton, CA		150
Telegraph Canyon, San Diego Co., CA	20	
Santa Clara River, Fillmore, CA		100
South Fork, Santa Clara River, CA	25	
Rippowam River, Stamford, CT	150	70
Wepawaug River, Milford, CT		150
West River, New Haven, CT		175
Federal Prison Creek, Atlanta, GA	16	
Mill Creek, Dalton, GA	20	
Placentia Canal, Savannah, GA		100
Kahawainui stream, Oahu, HI	160	
Vermilion River, Pontiac, IL	200	
Lancassange Creek, Clark County, IN	5	
Whitewater River, Hagerstown, IN	25	
Point of Pines, Revere, MA	200	145
Leaf & Bowie Rivers, Hattiesburg, MS	25	
Trim Cane Creek, MS	25	
Oneida Creek, NY	125	
Pebble Creek Scribner, NE	65	
Winnipesaukee River, NH	200	100
Red River, Argusville, ND	20	
San Francisco River, Reserve, NM	21	
East Canada Creek, Dodeville, NY		100
Clatsop County D/D Nos. 2 & 5, OR	22	
Whiskey & Rock Creeks, OK	180	
Blacklick Creek, Franklin Co., OH		300
Allegheny River, oil city, PA	100	
Rio Cibuco, Vega Baja, PR	136	119
Scotts Creek, Newberry Co., SC	36	
Socastee Creek, Horry Co., SC		85
Humboldt, TN	36	
Kirbyville, TX	45	
Projects Not Yet Identified		1,721
Subtotal P&S	2,032	3,315

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ACTUAL AND PENDING ALLOCATION FOR SMALL PROJECTS PROGRAMS
(Funds Shown in $1,000)

Program/Category/Item	Fiscal Year 1986	1987
FLOOD CONTROL (Section 205)		
Construction		
White River, Jacksonport, AR	600	80
Little Red River, Clinton, AR	2,000	650
W. Magnesia Canyon Channel, Rancho Mirage, CA	2,765	
Los Coches Creek, San Diego Co., CA	1,800	1,670
Telegraph Canyon Creek, San Diego Co., CA	1,000	2,200
South Fork, Santa Clara River, CA		2,485
Canoe Creek, KY	100	
Salyersville, KY	300	
Paw Paw Lake, MI	2,500	
Halstad, MN	25	
Middle River, Argyle, MN	95	
Black Bear and Miller Lake, MN	274	
Hattiesburg, Leaf and Bowie Rivers, MS	1,300	800
Ararat River, NC	490	700
Lost Creek, Columbia, NE	300	
Pebble Creek, Scribner, NE	300	700
Beaver Brook, Keene, NH	1,000	700
Puerco River & Tributaries Gallup, NM	300	
Passaic River Basin Flood Warning system, NJ & NY	500	
Conesus Lake, NY	150	600
Upper Scioto River, Marion Co., OH	170	
Pennypack Creek, Hatboro, PA	315	
Poquessing Creek, Bucks Co., PA	498	
West Little Pine Creek, Etna, PA	600	1,800
Sabana Grande, Rio Guanajibo, PR	800	2,300
Humboldt, Lick Creek, TN	570	400
Calloway Branch, Hurst, TX	588	
South Mayo River, Stuart, VA	900	2,500
Projects Not Yet Identified		2,000
Subtotal Construction	20,240	19,585
Contingencies	200	500
TOTAL PROGRAM (Section 205)	30,000	30,000
Reduction per Graham-Ruddman-Hollings Act	(-)1,290	1/
Revised Total Program (Section 205)	28,710	1/

1/ Estimated Fiscal Year 1987 reductions not assigned.

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ACTUAL AND PENDING ALLOCATION FOR SMALL PROJECTS PROGRAMS
(Funds Shown in $1,000)

Program/Category/Item	Fiscal Year 1986	1987
NAVIGATION (Section 107)		
Initial Appraisals	175	100
Reconnaissance Studies	600	500
Detailed Project Studies		
Larson Bay (SBH), AK	245	
Sand Point (SBH), AK	20	
Whittier (SBH), AK	16	
Tennessee River, Florence, AL	80	
Tennessee River, Morgan County, AL	40	
Humboldt Harbor, Fields Landing, CA		125
Larkspur Ferry, Marin Co., CA	100	
Clearwater River, Lewiston, ID	125	
Calvert City, KY	80	
North Pass-Pass Manchac, LA		100
Gloucester Harbor, MA		35
Pine Point Harbor, MA		50
Green Harbor, MA	40	60
Bass River, MA	50	60
Saugus River, MA	20	
Winthrop Harbor, MA	40	25
Green Harbor, MA		55
Tombigbee River, Columbus, MA	50	
Bass Harbor, ME	50	60
Wood Island Harbor, ME	30	55
Perkins Cove, ME	55	70
Greenwood Port, MS	60	
Ocean Springs Harbor, MS		60
Harkers Island, Carteret Co., NC	140	85
Calabash Creek, NC	70	
Lake Erie, Sturgeon Point, NY	81	
Sheepshead Bay, NY	25	
Schuylkill River, Philadelphia, PA	18	
Point Judith Harbor, RI	70	65
Scotts Creek, VA	60	
Hunting and Guilford Creeks, VA	96	100
Nansemond River, constance Wharf, VA	29	
Kings Creek, VA	22	
Oak Harbor (SBH), WA	100	
Sandy Point (SBH), WA	15	
Subtotal DPS	1,827	1,005

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ACTUAL AND PENDING ALLOCATION FOR SMALL PROJECTS PROGRAMS
(Funds Shown in $1,000)

Program/Category/Item	Fiscal Year 1986	1987
NAVIGATION (Section 107)		
Plans and Specifications		
Tennessee River, Morgan Co., AL	20	60
Tennessee River, Florence, AL	20	60
Dog River Channel, Mobile, AL	41	
Saxman SBH, AK	110	
Dillingham SBH, AK	200	
Juneau SBH, AK	35	
Larkspur Ferry, Marin Co., CA		150
Wilmington Harbor, DE	62	
Agat Harbor, GU	40	
Merizo Harbor, HI	50	10
Laupahoehoe Harbor, HI	80	
Saugus River, MA		75
Mint Channel, MD	70	
Tombigbee River, Columbus, MS		100
Schuylkill River, Philadelphia, PA	32	
Aquadilla Harbor, PR		100
Wachapreaque Channel, Accomack Co., VA	17	
Scotts Creek, VA	20	
Subtotal P&S	797	555
Construction		
Cordova (SBH), AK	80	
Mekoryuk, AK	1,000	400
Dog River, Mobile, AL		200
Tennessee River, Morgan County, AL		360
Tennessee River, Florence, AL		300
Larkspur Ferry, Marin Co., CA		220
Wilmington Harbor, DE		276
Bellville Point, GA	600	
Agat Harbor, GU	100	800
Laupahoehoe Harbor, HI	300	1,000
Burns Waterway (SBH), IN	75	
Lower Thorofare, Somerset Co., MD	1,370	
Zipple Bay, Lake of the Woods, MN	250	
Biloxi Harbor, East Harrison Co., Canal, MS	500	
Tombigbee River, Columbis, MS		400
Lorain Harbor, Lorain, OH	1,000	200
Aquadilla Harbor, PR		300

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ACTUAL AND PENDING ALLOCATION FOR SMALL PROJECTS PROGRAMS
(Funds Shown in $1,000)

Program/Category/Item	Fiscal Year 1986	Fiscal Year 1987
NAVIGATION (Section 107)		
Construction (cont'd)		
Wachapreaque channel, Accomack county, VA		84
Kalama Turning Basin, WA	645	
Subtotal Construction	5,920	4,540
Contingencies	46	200
Total Program (Section 107)	9,365	6,900
Reduction per Graham-Ruddman-Hollings Act	(-) 424	1/
Revised Total Program (Section 107)	8,941	1/

1/ Estimated Fiscal Year 1987 reductions not assigned.

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RIVER BASIN MONETARY AUTHORIZATION

Mr. BEVILL. What is the funding level of the various river basins?

General HEIBERG. Mr. Chairman, I will provide a listing of the basin names, the monetary authorization amount, and the estimated total requirement through Fiscal Year 1987 for the various basins for which there is a specific basin monetary authorization.

[The information follows:]

RIVER BASIN FUNDING LEVEL

[In thousands of dollars]

Basin/project	Monetary authorization	Estimated total requirement thru FY 1987
Alabama-Coosa River Basin	286,000	311,000
Arkansas River Basin	1,422,667	1,468,000
Arkansas-Red River Basin	46,400	70,000
Baltimore Harbor	40,000	57,800
Blue River Basin	40,000	27,000
Brazos River Basin	200,500	266,600
Central and Southern Florida	244,300	311,000
Columbia River Basin	2,013,300	2,167,500
(Columbia River Local Protection)*	(15,000)	D(27,500)
Connecticut River Basin	96,957	83,000
Cottonwood Creek	40,000	12,000
Gulf Intracoastal Waterway, Saint Marks, Tampa	40,000	0
Illinois Waterway Duplicate Locks	40,000	2,300
Mississippi River and Tributaries	2,559,922	4,385,000
Missouri River Basin	1,926,094	2,167,300
North Branch Susquehanna River Basin	237,000	297,500
Ohio River Basin	1,379,833	1,751,200
Ouachita River Basin	73,300	98,900
Red Run Drain and Lower Clinton River	40,000	3,900
Red River Waterway	119,000	794,000
Sabine River Basin	40,000	2,900
Sacramento River Basin	72,740	90,200
San Joaquin River Basin	305,500	371,900
Santa Ana River Basin	47,500	47,000
South Platte River Basin	138,300	157,400
Tampa Harbor	40,000	185,400
Trinity River Basin	83,000	457,700
Upper Mississippi River Basin	137,500	158,000
Wabash River Basin	50,000	4,700
White River Basin	305,000	336,000
Totals, 29 basins	12,064,813	16,985,700

*Specific monetary authorization within an overall monetary authorization.

Mr. BEVILL. Was action on the proposed legislation to eliminate the need for future monetary authorization completed? If not, will new legislation be proposed?

General HEIBERG. Action on the proposed legislation was not completed. Section 402 of both H.R. 1557 and S. 534, the Water Resources Development Act of 1985, would authorize to be appropriated such sums as necessary to complete the development of the basin plans, thereby eliminating the need for future River Basin Monetary Authorizations.

REGULATORY

Mr. BEVILL. How many permit applications did you process last year, the current year, and what is the outlook for FY 87?

General HEIBERG. In FY 85 we received 14,000 applications for individual permits compared with 13,500 for the previous year. We expect to remain in the 13,000 to 14,000 range over the next one to two years. Our regional and nationwide permits continue to cover many minor activities that, in the past, would have required formal applications from the public.

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Mr. BEVILL. I understand some states have taken over the responsibility for Section 404 permits. Would you elaborate?

General HEIBERG. At this time only Michigan has actually assumed responsibility for that portion of the 404 program that is eligible for transfer. Other states have expressed interest in taking on the regulation of historically navigable 404 waters but have not done so because of inadequate resoruces, lack of appropriate state legislation, or other factors. We understand that EPA is revising their regulations to make transfers easier in the future.

INDUSTRY HOPPER DREDGE WORK

Mr. BEVILL. How much of the Corps hopper dredge work will go to the Industry in Fiscal Years 1986 and 1987?

General HEIBERG. Our budget requests are based upon a projection of 31.2 million cubic yards of work to be performed by Industry owned hopper dredges in FY 1986, and 30.7 million cubic yards in FY 1987. These figures are consistent with Congressional guidance that 30 million cubic yards should be advertised for industry hopper dredge work each year. Our current estimate, reflecting adjustments for possible changed conditions and work for others, is that 37.7 million cubic yards of hopper dredge work will be made available for competitive bidding by the industry in FY 1986.

SECTION 404

Mrs. BOGGS. Mr. Dawson, the Admininstration's policy for handling 404 permits was the subject of some discussion during your confirmation hearings. What are your plans for handling 404 permits during the coming year? Do you foresee any changes from the Corps' past policies for handling these permits?

Mr. DAWSON. We plan to continue to review permit applications with the same balanced view that we have always maintained in the past. We recently modified our agreements with EPA and the Department of Interior to ensure that the comments of these agencies are given full consideration in the permit process. We also just concluded an interim agreement with EPA that will define regulation of solid waste. We do foresee a slight expansion of our 404 authority through the regulation of certain isolated waters.

RESULTS OF GRACE COMMISSION RECOMMENDATIONS

Mr. BEVILL. The Grace Commission issued several reports a number of years ago on agency management and operations. Could you tell the Committee what action you have taken to address the recommendations of the Grace Commission and what the results have been?

Mr. DAWSON. Due to some changes in dredged material disposal policies by EPA and improved implementation of A-76, which involves contracting out certain Government functions, we estimate the Corps of Engineers will save a total of $103.5 million between FY 84 and FY 90. In response to a Grace Commission recommendation to organize the Corps in a more efficient and effective manner, we developed a strategic and organization plan in FY 84 and increased activities concerning development, evaluation, pilot testing, and implementation of organizational alternatives. These activities were completed in FY 85. The only potential dollar savings in this recommendation related to closure of some districts and divisions. We did not pursue the proposal to close some Corps of Engineers offices because we determined the required Congressional action is unlikely.

The overwhelming bulk of the potential savings is related to user fees. However, Congress would have to pass legislation to realize the estimated savings of $2.3 billion between FY 86 and FY 91. These savings would come from updates in the fees we charge at Corps recreation sites and inland waterways, and from cost recovery for Corps services in commercial harbors and channels.

GRAMM-RUDMAN-HOLLINGS SEQUESTRATIONS

Mr. BEVILL. Provide a summary table of the Gramm-Rudman-Hollings sequestrations, by appropriation account and a copy of agency guidance with regard as to how reductions were to be made.

General HEIBERG. A table is included as the last page of my statement for the record. I will provide a copy of our agency guidance.

[The information follows:]

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FOR ALL COMMANDERS; CHIEFS OF PROGRAM DEVELOPMENT OFFICES; AND COMPTROLLERS/RESOURCE MANAGEMENT OFFICERS

SUBJ: GRAMM-RUDMAN-HOLLINGS ACT REDUCTIONS AND IMPACTS ON CIVIL WORKS ACTIVITIES

A. PUBLIC LAW 99-177, THE "BALANCED BUDGET AND EMERGENCY DEFICIT CONTROL ACT OF 1985," AND GENERALLY REFERRED TO AS THE GRAMM-RUDMAN-HOLLINGS ACT (G-R-H). THIS ACT CONSTITUTES TITLE II OF HOUSE JOINT RESOLUTION (H.J. RES.) 372, INCREASING THE STATUTORY LIMIT ON THE PUBLIC DEBT, APPROVED 12 DECEMBER 1985.

B. CONFERENCE REPORT (HOUSE REPORT NO. 99-450), DATED 19 DECEMBER 1985, ON H.J. RES. 465, THE CONTINUING RESOLUTION AUTHORITY ON FURTHER CONTINUING APPROPRIATIONS FOR FISCAL YEAR 1986 (FY 86 CRA), APPROVED 19 DECEMBER 1985; IN PARTICULAR, THE

SCHWARTZ/DAEN-CWB-E/20188
31 JANUARY 1986

N.J. HATCH/MG DAEN-CWZ-A/20099

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"ENERGY AND WATER DEVELOPMENT" SECTION, ON PAGE 341 OF THE REPORT, AS PUBLISHED ON PAGES H12964-5 OF THE CONGRESSIONAL RECORD FOR 19 DECEMBER 1985.

C. "SEQUESTRATION REPORT FOR FISCAL YEAR 1986 - A JOINT REPORT TO THE COMPTROLLER GENERAL OF THE UNITED STATES," AS PUBLISHED IN THE FEDERAL REGISTER, VOLUME 15, NO. 10, DATED 15 JANUARY 1986, BOOK 2 (PAGES 1917-2336) OF 2 BOOKS. THE INTRODUCTION TO THIS REPORT, ON PAGES 1-20, GIVES A GOOD OVERVIEW OF THE G-R-H SEQUESTRATION PROCESS, AND HOW THE OVERALL FY 86 REDUCTION FORMULA AND THE UNIFORM REDUCTION PERCENTAGE WERE DERIVED AND APPLIED TO NON-DEFENSE NON-EXCEPTED PROGRAMS. THE SPECIFIC APPLICATION OF THE 4.3 PERCENT REDUCTION FACTOR TO EACH OF THE CORPS CIVIL WORKS APPROPRIATION ACCOUNTS IS SHOWN ON PAGES 48 AND 49.

D. DAEN-CWB-D TWX 301328Z DEC 85, SUBJECT: GRAMM-RUDMAN-HOLLINGS ACT.

E. DAEN-RMB-S TWX 021303Z JAN 86, SUBJECT: FY 86 IMPACT OF THE GRAMM-RUDMAN-HOLLINGS "BALANCED BUDGET AMENDMENT".

F. DAEN-CWB-E TWX 101931Z JAN 86, SUBJECT: GRAMM-RUDMAN-HOLLINGS ACT.

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NO

1. IN ACCORDANCE WITH THE GRAMM-RUDMAN-HOLLINGS ACT (G-R-H), THE PRESIDENTIAL ORDER TO SEQUESTER FY 1986 FUNDS IS TO BE ISSUED ON 1 FEB 86. UNLESS CONGRESS ACTS, AND THE PRESIDENT AGREES, TO MODIFY THIS SEQUESTRATION BY ADOPTING AN ALTERNATIVE DEFICIT REDUCTION PLAN, THE FY 1986 REDUCTIONS WILL TAKE EFFECT ON 1 MAR 86. THE PRESIDENTIAL ORDER IS EXPECTED TO DIRECT A UNIFORM PERCENTAGE REDUCTION OF 4.3 PERCENT TO BE APPLIED ACROSS-THE-BOARD TO ALL FY 86 APPROPRIATIONS FOR NON-DEFENSE NON-EXCEPTED PROGRAMS. ACCORDINGLY, THE 4.3 PERCENT REDUCTION FACTOR WILL BE APPLICABLE, AS OF 1 MAR 86, TO THE FY 86 APPROPRIATIONS FOR EACH APPROPRIATION ACCOUNT OF THE CORPS OF ENGINEERS CIVIL WORKS (CW) PROGRAM. THIS REDUCTION IS NOT APPLICABLE TO THE 30 SEP 85 CARRYOVERS INTO FY 86 OF UNOBLIGATED OR UNEXPENDED BALANCES FROM FUNDS APPROPRIATED IN PREVIOUS YEARS. BELOW THE LEVEL OF EACH APPROPRIATION ACCOUNT, THE CORPS OF ENGINEERS IS REQUIRED TO APPLY THIS SAME 4.3 PERCENT REDUCTION UNIFORMLY ACROSS-THE-BOARD TO THE FY 1986 APPROPRIATED FUNDS ALLOCATED TO EACH INDIVIDUAL PROJECT, STUDY, AND ACTIVITY.

2. AS PRESCRIBED BY G-R-H, AND FURTHER CLARIFIED IN THE ENERGY

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AND WATER DEVELOPMENT SECTION OF THE CONFERENCE REPORT ACCOMPANYING THE CONTINUING RESOLUTION AUTHORITY MAKING FURTHER CONTINUING APPROPRIATIONS FOR FY 1986 (REFERENCE B), THE REQUIREMENT THAT THE ACROSS-THE-BOARD REDUCTION IS TO BE APPLIED UNIFORMLY TO EACH APPLICABLE PROGRAM, PROJECT, STUDY, AND ACTIVITY WAS ADOPTED TO PRECLUDE THE POSSIBILITY OF USING THESE REDUCTIONS AS A VEHICLE FOR PRIORITIZING AND REORDERING THE INITIAL ALLOCATION OF FUNDS, AS REFLECTED IN THE FY 86 ENERGY AND WATER DEVELOPMENT APPROPRIATION ACT AND ITS LEGISLATIVE HISTORY, PARTICULARLY IN THE ASSOCIATED COMMITTEE AND CONFERENCE REPORTS, AND AS FINALLY APPROVED BY THE PRESIDENT. FURTHERMORE, THE REDUCTIONS ARE TO BE APPLIED TO BUDGET AUTHORITY AFTER THE NORMAL APPLICATION OF SAVINGS AND SLIPPAGES. HOWEVER, THE AFORESAID ENERGY AND WATER DEVELOPMENT SECTION OF THE CONFERENCE REPORT ON THE FY 86 CRA ALSO RECOGNIZES THAT, AFTER THE G-R-H REDUCTIONS ARE MADE, SITUATIONS WILL INEVITABLY ARISE OR BECOME EXACERBATED ON SOME OF THESE INDIVIDUAL PROGRAMS, PROJECTS, STUDIES, OR ACTIVITIES, WHICH MAY REQUIRE A SUBSEQUENT ADJUSTMENT OF FUNDING. IN THE WORDS OF THAT CONFERENCE REPORT: "FOR THE PURPOSE OF PROGRAM EXECUTION, IT IS NOT INTENDED THAT

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NO

NORMAL REPROGRAMMING BETWEEN PROJECTS AND ACTIVITIES NECESSITATED BY UNFORESEEN CIRCUMSTANCES BEYOND THE CONTROL OF THE AGENCY OR REQUIRED FLEXIBILITY FOR NORMAL OPERATION AND MAINTENANCE, OR NEEDED FOR THE EFFICIENT PROSECUTION AND COMPLETION OF SCHEDULED WORK OR FOR OTHER PROGRAMMATIC NEEDS BE PRECLUDED." FOR THE CW PROGRAM, THESE G-R-H REDUCTIONS WILL BE EFFECTED IN THE FORM OF REVOCATIONS TO THAT PORTION OF EXISTING WORK ALLOWANCE FOR PROJECTS, STUDIES, AND ACTIVITIES THAT WERE FUNDED OUT OF THE FY 1986 APPROPRIATIONS.

3. THE LIST OF ALL PROPOSED G-R-H REDUCTIONS FOR EACH AFFECTED PROJECT, STUDY, AND ACTIVITY IN YOUR DIVISION OR OTHER FOA, TO BE WITHDRAWN EFFECTIVE 1 MAR 86, WILL BE FURNISHED YOU ELECTRONICALLY ON 31 JAN 86. THE LIST ALSO SHOWS FUNDS PREVIOUSLY ALLOCATED TO FOAS AND FUNDS RETAINED IN OCE BUT ALLOCATED TO A SPECIFIC PROJECT, STUDY, OR ACTIVITY FOR G-R-H REDUCTION PURPOSES. IN TAKING THESE REDUCTIONS, THE FOLLOWING GROUNDRULES ARE APPLICABLE:

A. REDUCTIONS SHOULD BE TAKEN FROM UNOBLIGATED TOTALS WHERE POSSIBLE. AN EXCEPTION TO THIS RULE WOULD BE FUNDING FOR SUPERVISION AND INSPECTION ON ONGOING CONTRACTS.

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SIGNATURE

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B. IF UNOBLIGATED TOTALS ARE INSUFFICIENT TO COVER REDUCTIONS:

(1) CHECK THE LIST OF PROPOSED G-R-H REDUCTIONS TO DETERMINE WHETHER ADDITIONAL FUNDS HAVE BEEN ALLOCATED TO THE SPECIFIC PROJECT, STUDY, OR ACTIVITY BUT RETAINED IN OCE. THE DIFFERENCE BETWEEN THE UNOBLIGATED BALANCE IN A DIVISION AS OF 1 FEB 86 AND THE G-R-H REDUCTION MAY COME FROM OCE-RETAINED FUNDS.

(2) IF FUNDS ARE NOT AVAILABLE IN OCE, IT MAY BE NECESSARY TO DEOBLIGATE FUNDS IN SOME INSTANCES.

C. IT MUST BE UNDERSTOOD THAT THE G-R-H REDUCTIONS WILL, IN SOME CASES, REQUIRE DELAYS IN SCHEDULED INITIATION, RATE OF EXECUTION, AND COMPLETION OF CERTAIN EFFORTS. SUCH G-R-H IMPACTS, INCLUDING DELAYS IN CONTRACT AWARDS AND STRETCHOUT OF CONTRACT AND IN-HOUSE WORK SCHEDULES AND EXPENDITURE RATES, ARE CONSIDERED TOLERABLE. HOWEVER, YOU ARE TO ADVISE THIS OFFICE PROMPTLY WHERE A G-R-H CUT WOULD CREATE AN UNACCEPTABLE SITUATION, SUCH AS TERMINATION OF A CONTRACT, OR SHUTDOWN OF A WORK ITEM ON A PROJECT, STUDY, OR ACTIVITY WHERE THAT COMPONENT IS ON THE CRITICAL PATH.

4. REQUEST EACH DIVISION COMMANDER AND OTHER ACTION ADDRESSEE

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MESSAGE HANDLING INSTRUCTIONS

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FOA COMMANDERS REPORT BY LETTER OR ELECTRONIC TRANSMISSION THE RESULTS OF HIS REVIEW OF THE G-R-H REDUCTIONS AND THEIR IMPACTS, TO ARRIVE BY 7 FEB 86, AT DAEN-CWB-C, E, OR W FOR ALL APPROPRIATION ACCOUNTS EXCEPT O&M, GEN WHICH IS TO BE REPORTED TO DAEN-CWO-M. IF G-R-H REDUCTIONS CANNOT BE TAKEN BECAUSE FUNDS ARE FULLY OBLIGATED AND EXPENDED, PROVIDE SUCH INFORMATION WITH SUPPORTING SCHEDULES; AND ADVISE AS TO WHICH FUNDS CURRENTLY AVAILABLE TO THE DIVISION OR OTHER FOA CAN BE REPROGRAMMED TO COVER THE G-R-H REDUCTION, AND THE ASSOCIATED IMPACTS ON THE SOURCES OF PROPOSED FUND TRANSFERS. DURING FEB 86, HQUSACE WILL BE WORKING ON NECESSARY REPROGRAMMING ACTIONS TO RESOLVE UNACCEPTABLE FUNDING PROBLEMS GENERATED BY G-R-H REDUCTIONS.

5. COINCIDENT WITH THE 1 FEB 86 ISSUANCE OF THE PRESIDENT'S ORDER TO SEQUESTER FY 86 FUNDS, ASA(CW) WILL FURNISH TO CONGRESS, OMB, AND GAO THE DETAILED LIST OF SEQUESTRATIONS FOR EACH APPLICABLE CW PROJECT, STUDY, AND ACTIVITY. REQUEST YOU FURNISH PROMPTLY TO THE RELEVANT CONGRESSIONAL DELEGATIONS, MEDIA, AND OTHERS CONCERNED, AS YOU CONSIDER DESIRABLE, APPLICABLE INFORMATION FROM YOUR LIST OF SEQUESTRATIONS. IN

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MESSAGE HANDLING INSTRUCTIONS

THIS CONNECTION, WE ARE FURNISHING YOU, UNDER SEPARATE COVER, A LIST OF Q'S AND A'S THAT WILL BE USEFUL IN RESPONDING TO INQUIRIES FROM THE MEDIA AND OTHERS.

6. SEPARATE GUIDANCE WILL BE PROVIDED ON MILITARY APPROPRIATIONS.

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EMPLOYMENT LEVELS

Mr. BEVILL. Provide a summary table showing employment levels for the agency in the same format that appears in House Report 99–195 on page 8.

General HEIBERG. Yes, sir.

[The information follows:]

EMPLOYEES FUNDED BY ENERGY AND WATER DEVELOPMENT APPROPRIATIONS

[Workyears]

Fiscal year:	Federal [1]	Non-Federal [2]	Total
1985	28,600	64,400	93,000
1986	28,400	60,700	89,100
1987 Proposed	28,200	61,800	90,000

[1] Corps of Engineers employees only.

[2] Estimates of non-Federal workyears are based on the Department of Defense ratio of 35 workyears per $1 million of non-personnel outlays, adjusted to 1982 price levels, from the General Investigations; Construction, General; Operation and Maintenance, General; and Flood Control, Mississippi River and Tributaries appropriation accounts. Non-Federal workyears consist of prime contractor, subcontractor, and vendor personnel, and support employment within the economy.

CAPITAL AND OPERATING EXPENSES

Mr. BEVILL. Provide a summary table showing the breakdown of appropriations by capital and operating expenses in the same format that appears in House Report 99–195 on page 7.

General HEIBERG. Yes, sir.

[The information follows:]

	Fiscal year 1987 budget request
Operating Expenses	$2,250,198,000
Capital and Construction [1]	828,302,000
Total	3,078,500,000

[1] Equipment, land, and structures.

OUTLAYS

Mr. BEVILL. Provide a summary table showing the prior three years estimated outlays and actual outlays by appropriation account and a table showing the FY 1987 budget authority request and outlays associated with that request for the next five years. Provide this by appropriation account.

Mr. DAWSON. We will provide that information for the record.

[The information follows:]

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ESTIMATED AND ACTUAL OUTLAYS - FY 1984 - FY 1986 INCLUSIVE
(Dollars in Millions)

	General Investigations	Construction General	Operation & Maintenance, General	Flood Control Coastal Emergencies	General Expenses	FC, MR&T	Permanent Appropriations	Revolving Fund 1/	Total General Funds	Inland Wat Trust Fund	Rivers & Harbors Contributed Funds	Total Trust Funds
FY 1984												
Estimated	133.0	1,150.0	1,271.0	25.0	106.0	350.0	9.0	8.0	3,052.0	0	51.0	51.0
Actual	138.6	1,102.7	1,287.2	36.8	104.3	394.8	9.5	0	3,073.9	0	50.2	50.2
FY 1985												
Estimated	138.2	1,096.0	1,332.0	40.0	113.8	349.0	9.7	6.1	3,084.8	0	52.0	52.0
Actual	138.1	1,033.0	1,314.5	39.3	110.1	328.2	9.9	0	2,973.1	0	45.5	45.5
FY 1986												
Estimated	133.0	1,000.0	1,320.0	40.0	110.0	318.0	13.0	7.0	2,941.0	7.8	96.0	103.8
After Sequester	129.2	978.3	1,273.8	40.0	109.0	307.6	13.0	6.7	2,857.6	7.8	96.0	103.8

MULTIYEAR PLANNING ESTIMATES - FY 1987 - FY 1991 INCLUSIVE
(Dollars in Millions)

	General Investigations	Construction General	Operation & Maintenance, General	Flood Control Coastal Emergencies	General Expenses	FC, MR&T	Permanent Appropriations	Revolving Fund 1/	Total General Funds	Inland Wat Trust Fund	Rivers & Harbors Contributed Funds	Harbor Maintenance Trust Fund	Total Trust Funds
FY 1987													
Budget Authority	127	1,046.5	1,217	25	115	298	9	12	2,849.5	26	227	203	456
Outlays	125.3	1,028.6	1,206.2	23.9	114.2	294.8	9	12	2,814.0	26	227	203	456
FY 1988													
Budget Authority	131	1,110.5	1,268	25	115	322	9	63	3,043.5	60	320	220	600
Outlays	131	1,110.5	1,268	25	115	322	9	63	3,043.5	60	320	220	600
FY 1989													
Budget Authority	135	1,112.6	1,315	25	115	333	9	59	3,103.6	108	337	230	675
Outlays	135	1,112.6	1,315	25	115	333	9	59	3,103.6	108	337	230	675
FY 1990													
Budget Authority	135	1,143.8	1,358	25	115	347	10	30	3,163.8	142	425	240	807
Outlays	135	1,143.8	1,358	25	115	347	10	30	3,163.8	142	425	240	807
FY 1991													
Budget Authority	135	1,188.3	1,460	25	115	360	10	10	3,303.3	123	447	250	820
Outlays	135	1,188.3	1,460	25	115	360	10	10	3,303.3	123	447	250	820

1/ Outlay data includes new budget authority only, and excludes outlays from the corpus of the fund.

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Additional Questions Submitted by Congressman Watkins

COST SHARING AND PARKER LAKE

Mr. WATKINS. Mr. Secretary, last year you said there would be some flexibility regarding cost sharing on water projects in low-income areas. Since then, not only has there been no flexibility in the case of Parker Lake in a low-income area of my district, but you have also said there is not Federal interest in the Parker Lake project. What brought this about-face?

Mr. DAWSON. The flexibility which I referred to last year was in the context of the legislative proposals then being presented by the Administration. Since that time, the Administration has reached a compromise with the Senate Majority Leadership and the terms of the compromise are essentially represented in S. 1567. The flexibility, then, which we now have, is that provided for in S. 1567. With regard to the Parker Lake project, the issue is not one of flexibility regarding the timing of the non-Federal contributions but rather the issue of the appropriateness of Federal participation in the project at all. Thus I would indicate that there has been no about-face—simply the finding of a lack of Federal interest in the project. I might say that the determination of a lack of Federal interest was a position reached only after a detailed review by the Office of Management and Budget and the Department of the Army subsequent to my testimony last spring. I assure you there is no intention on my part to be other than completely straightforward with regard to the flexibility and Federal interest questions as we then understood them.

Mr. WATKINS. Mr. Secretary, according to information you supplied this Committee last year, the flood control benefits of the Parker Lake project are 8 percent. Yet, you say in your letter that Parker is a single-purpose M&I (municipal and industrial) project.

How do you decide what the magic number is for eliminating one type of benefits from consideration in a proposed water project? Is it 10 percent? 12 percent? 8 percent?

Mr. DAWSON. I don't believe that there is a magic number that indicates that a project is multiple purpose versus single purpose water supply. It is more a question of a careful examination of the benefits with regard to the extent to which such benefits are incidental to the provision of the water supply purpose as opposed to being associated with storage provided in addition to that which would be provided by a single-purpose water supply project.

Mr. WATKINS. Mr. Secretary, your letter of December 13 advised me that the Administration has concluded that there is no Federal interest in Parker Lake because it is a single-purpose municipal and industrial (M&I) water supply project for the Oklahoma City metropolitan region that should and could be constructed by non-Federal interests.

Mr. Secretary, how can you categorize this project as an Oklahoma City project when the main purpose of Parker Lake would be to provide a long-term water supply for the communities and rural water districts in Coal, Pontotoc, Hughes, Seminole and Pottawatomie counties?

Mr. DAWSON. It was our understanding that the Parker Lake project was for the Oklahoma City metropolitan region. You suggest that this may not be the case and that, indeed, the purpose is for long-term water supply to communities and rural water districts elsewhere in Oklahoma. In any case, I want to affirm our willingness to work with whoever would be the user of this project to encourage them to develop a financing package based on project benefits.

Mr. WATKINS. Mr. Secretary. how do you propose that rural, sparcely populated, non-industrialized areas with poor economic bases provide up-front financing for water projects? An adequate water supply is necessary to build jobs and the economic future for these counties.

Mr. DAWSON. In our view, it is the character of the project benefits not the characteristics of the beneficiaries that provide the basis for water project financing. Real benefits provide the basis for real financing opportunities. We also should recognize that the provision of water supply alone is not a sufficient condition for economic growth.

COST SHARING FEASIBILITY STUDIES

Mr. WATKINS. What is the Corp's current position on cost sharing for feasibility studies?

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Mr. DAWSON. All feasibility phase studies which are underway on or after 15 March 1986 will be cost shared 50–50 with the local sponsor, except for those few studies that have been specifically exempted. Cost sharing is addressed for each feasibility study in an agreement which is developed between the District and the local sponsor during the reconnaissance phase of the study and includes such provisions as allowing the local sponsor to provide up to 50% of his share of the feasibility cost with materials or effort in-kind. The first agreements were signed in December 1984 and to date a total of 18 such agreements have been executed, with an additional 26 more scheduled to be executed during fiscal year 1986. The effect of this cost sharing initiative will be a reduction of cost to the Federal Government for conducting feasibility phase studies; a more active involvement of the local sponsor in the study process, leading to study recommendations which are more acceptable to them; and a more efficient study process because studies which are unlikely to result in a project will end at an early date.

RED RIVER BASIN, ARKANSAS, TEXAS, LOUISIANA AND OLKAHOMA—ARKANSAS RIVER AND TRIBUTARIES, SOUTH CENTRAL-SOUTHEAST AREAS OF OKLAHOMA COMPREHENSIVE STUDIES

Mr. WATKINS. Report language in the Energy and Water Appropriations bill for Fiscal Year 1984 directed the Corps to investigate as part of these two studies "the control of floods, development of water supply, treatment, and conveyance facilities, irrigation, chloride control, development of solar pond powerplants and related facilities, the generation of hydroelectric power including pump back storage, the development and enhancement of the recreation potentials and enterprises of the region, the improvement of the rivers for navigation and port site development where this would further industrial development at less cost than would the improvement of other modes of transportation, the conservation and efficient utilization of the land resources, and other such measures as may be found necessary to achieve the objectives of these comprehensive efforts." Are these included in current study efforts?

Mr. DAWSON. No, they are not. We are not pursuing the complete development of non-traditional measures beyond the reconnaissance stage of the study. We will consider non-traditional features sufficiently to assure compatibility with traditional measures we ultimately recommend.

Mr. WATKINS. Who not?

Mr. DAWSON. Athough we are working toward solutions for the development of the study area which will contribute toward efficient development of water resources by both Federal and non-Federal interests, our recommendations will be limited to projects that accomplish or include accomplishments of the traditional purposes of flood control and navigation. Multiple purpose projects that include those purposes will be considered and recommended, if justified.

LEASE POLICY

Mr. WATKINS It is my understanding that the Corps is working toward a lease policy using a 99-year basis.

What is the Corps' policy on leases?

Have you moved forward on the 99-year plan?

Mr. DAWSON. Leases on Civil Works projects serve a variety of purposes to provide supplementary benefits to the public. These include cooperative agreements and permits with other Federal agencies, leases to non-Federal government agencies, and leases for commercial concessions. Leases and licenses to government agencies generally do not exceed 30 years, but may be as long as 50 years in exceptional cases when such terms are deemed to be in the public interest. Leases for commercial concessions generally do not exceed 25 years in length.

The Department of the Army is not working toward a lease policy using a 99-year basis. We have received proposals that have included recreation leases for 99-year terms, but have not granted such terms on any lease. However, we do intend to keep an open mind with regard to any proposal that can provide recreational or other benefits to the public in this time of fiscal concern.

USER FEES

Mr. WATKINS: Mr. Secretary, I have heard that the Corps has begun charging fees in the Ft. Smith area for barge traffic on the Arkansas River, but such fees are not charged in other areas. Can you explain current Corps policy in this area?

Mr. DAWSON. The Corps does not charge fees for barge traffic on the Arkansas River in the Fort Smith area. The Corps does not have authority to collect any such

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fees on any of the inland waterways. There is, however, a fee collected for overnight camping at the Corps-operated recreation area adjacent to the landside entrance to Lock and Dam 13, which is in the Fort Smith area.

WATER SUPPLY STORAGE CONTRACTS

Mr. WATKINS. Mr. Secretary, I understand that the Corps of Engineers has agreed to negotiate all water storage contracts in the state of Kansas based on the actual construction costs and interest as prescribed by the Water Supply Act of 1958.

Is this policy consistent with that being applied elsewhere?

Specifically, what policy is being applied to Oklahoma contracts?

Was that policy applied to Lake Eufaula and the City of McAlester?

How do you justify these differing policies?

Mr. DAWSON. When storage in existing reservoirs is being reallocated from an authorized purpose to water supply, it is our policy to charge local interests the highest of the benefits or revenues foregone, replacement cost, or the updated cost of storage in the Federal project. It costs are to be reimbursed, the interest rate used is the water suply rate determined annually be the Department of the Treasury in effect when the repayment contract is signed. This policy is being applied nationwide, including Oklahoma.

The Federal/State partnership established by the Memorandum of Understanding (MOU) of December 11, 1985, between the Department of Army and the State of Kansas, was designed to take advantage of a unique opportunity to solve water supply problems in the State of Kansas, to enhance the recovery of past Federal investments in water resources development in Kansas, and to shift a greater portion of the operation and maintenance expenses to the State. A key element of this partnership is the intention of the Department of the Army to calculate the price of any water supply storage that may be made available as a result of the new partnership on the same basis that would have occurred if such storage originally had been authorized as municipal and industrial water supply storage.

The first point that is important in order to understand the decision is that the water supply storage to be sold on the basis mentioned above would not have been available for water supply purposes in the absence of the new partnership. The reason for this situation is that each of the nine reservoirs cited in the MOU contains conservation storage (other than municipal and industrial water supply storage) that may not be needed for originally authorized purposes if certain water quality inflows and releases are protected and if systemwide conjunctive operation of the reservoirs for conservation purposes can be attained. However, the Federal government cannot accomplish these pre-conditions for the availability of additional water supply storage unilaterally. The only way in which these pre-conditions can be attained is in cooperation with an entity with appropriate jurisdiction and sufficient authority to establish the pre-conditions. For the Kansas, Neosho, Marais des Cygnes, and Verdigris River Basins in Kansas, the only such entity that exists is the Kansas State government.

The second point that is important in understanding the decision is that, prior to entering into the MOU, a determination was made that no cost recovery from the storage in question was expected for the remaining physical life of the reservoirs. Furthermore, there was no expectation of relief from Federal operation and maintenance expenses allocated to such storage.

Finally, the pricing concept embodied in the MOU will be implemented only if the following pre-conditions necessary for the availability of additional water supply storage are attained:

(1) Protection of Water Quality Inflows and Releases.—All nine reservoirs included in the MOU have Congressinally mandated low flow releases for purposes other than municipal and industrial water supply. However, certain municipalities, industries, and other users have, in the past, withdrawn water made available from such releases and used such water for municipal and industrial purposes without payment to the Federal government for storage costs. In the absence of the MOU, this situation is expected to continue. In addition, upstream diversions of flows are expected to continue to reduce inflows into existing water quality storage in all nine reservoirs, thus reducing over time the expected yields and dependability of yields from water quality storage. Under the MOU, the State agreed to establish water quality reservation rights to protect water quality inflows and releases, including legislation if necessary.

(2) Systemwide Conjunctive Operation of Reservoirs.—Corps operating rules for flood control typically are developed on a systemwide basis. This is possible because the Corps has decision-making authority for all releases from flood control storage.

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However, such is not the case for water supply. Since water supply releases are made at the request of the owner of each particular increment of water supply storage, water supply releases generally are made at each reservoir in isolation. However, if substantially all of the water supply storage in a given river basin were owned by the same customer, and if that customer were willing to cooperate fully with the Corps, then systemwide operation for water supply would be possible. In such a situation, many demands could be met by releases from more than one reservoir, and therefore the reservoirs in the system could share the risk of shortage, thus reducing the risk of shortage (increasing the level of dependability) to most users. This same effect could also be brought about by the construction of additional storage reservoirs. However, because of the new partnership established by the MOU, an increased level of dependability can be realized without additional construction, thus effectively creating new storage at no cost to the Federal government. The only entity with sufficient jurisdiction and authority to enable the synergism embodied in such systemwide conjunctive operation for water supply is the State of Kansas.

In addition to its commitments to protecting water quality inflows and releases and pursuing systemwide operation in conjunction with the Corps, the State of Kansas has provided other considerations as contributions to the partnership embodied in the MOU. These are: cost sharing on a 50/50 basis of the reallocation studies to be conducted on each of the nine reservoirs, agreement to pay cash up front for all water supply storage purchases, immediate establishment of an escrow account of $4 million, earmarked for the purchase of water supply storage under the MOU, and immediate assumption of 100% of the operation and maintenance costs allocated to each increment of storage at the time of purchase.

TENN–TOM CORRIDOR TRAILER

Mr. WATKINS. Mr. Secretary, I understand the Mobile District will have no further use for the mobile trailer and special computer equipment used in the Tenn-Tom Corridor Study, and that they plan on disposing of the trailer and computer equipment.

What are the plans for this trailer and computer equipment?

Mr. DAWSON. The Mobile District is still using the Corridor Study trailer and computer equipment to complete the transfer of the capability for its use to the local and state level. It is anticipated that the trailer will be used at least through the end of Fiscal Year 1986. When the trailer has completed its mission, there are several options available for it. As the public demand for the computer usage increases, there may be a need to install the computer in the Mobile District Office for staff use. Concurrently, the Mobile District's Emergency Management Office has expressed an interest in acquiring and converting the trailer for use as a mobile command post during emergencies. The Mobile District is completing negotiations on a Memorandum of Agreement with the Tennessee-Tombigbee Waterway Development Authority to delineate responsibilities to assure the proper use and development of the waterway's corridor. Part of the Memorandum includes the transfer of the maintenance of the Corridor Study's data bases to the Authority.

Mr. WATKINS. Could this trailer and computer equipment be transferred to the Tulsa District to be made a part of area computer models being developed by them?

Mr. DAWSON. Sir, at the current time the Tulsa District has not identified a specific need for the trailer and computer equipment. However, the Tennessee-Tombigbee Waterway Development Authority has expressed an interest in acquiring the computer equipment now in the trailer. At the present time, no decision has been made regarding the disposition of the trailer or its equipment.

FEDERAL VERSUS FEDERAL ENERGY REGULATORY COMMISSION HYDROPOWER

Mr. WATKINS. Mr. Secretary, what is the current policy regarding the study of hydropower at existing or planned Corps projects where both a non-Federal sponsor for the Federal project has been identified and a non-Federal FERC (Federal Energy Regulatory Commission) permit or license application is on file?

Mr. DAWSON. We would normally expect that, where there was a non-Federal applicant who was seeking either a Federal Energy Regulatory Commission permit or license to develop hydropower site, we would not wish to pursue any study of a Federal project. It would unlikely to be a responsible use of our limited Federal funds when a similar project could be developed without any Federal involvement at all.

Mr. WATKINS. Will the Corps continue to study the Federal project?

Mr. DAWSON. I think it would be difficult to justify Corps study as I have indicated.

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Mr. WATKINS. If the NED (National Economic Development) plan is not considered marketable by the non-Federal sponsor and/or the power marketing agency, will the Corps continue to study a scaled-down version considered marketable?

Mr. DAWSON. It is difficult to imagine, frankly, a situation where the National Economic Development plan outputs would not be considered marketable by the non-Federal sponsor and/or the power marketing agency. In such cases, I would seriously question the appropriateness of the benefit estimates.

Mr. WATKINS. Does it have to be a better use of the resources than the FERC (Federal Energy Regulatory Commission) plan?

Mr. DAWSON. I would certinly hope that we are not studying any hydroelectric development potential that would not result in a significant gain in economic efficiency compared to what could be provided by non-Federal development.

Questions Submitted by Congressman Conte

CORPS BUDGET

Question. Secretary Dawson, many people have commented on the fact that at a time when most non-defense programs are being slated for cutbacks, or at best a freeze in real terms, the Corps budget is proposed to increase by over 13 percent, with the construction budget increasing by over 20 percent. Would you like to address the question of how the Corps did so well compared to many other resource development programs?

Answer. I certainly appreciate your concern, particularly when I characterized it as a strong program. However, there really is no increase as such. The FY 1986 appropriations did not include follow-on funding for the FY 1985 new construction starts. The FY 1987 budget does and deletion of the $230 million in second year funding would reduce needed Federal appropriations to about the same level as that received for FY 1986. It is the increased non-Federal contributions which has allowed us to stretch Federal funding and still initiate the 19 new construction starts in FY 1987.

NEW STARTS

Question Secretary Dawson, you indicated that the budget request included follow-on funds for 40 of the 41 new starts in the 1985 supplemental. Which one is not included, and why?

Answer. We are not requesting funds for the Parker Lake, Oklahoma project. Review of the feasibility report for that project concluded that it was essentially a single-purpose project and really a responsibility of non-Federal interests. The need to exercise budgetary constraint is also a contributing factor. We have only so much funds we can allocate to new starts—even among the 41 projects in the FY 1985 Supplemental. We just feel it is prudent at this time to allocate funds to those flood control and commercial navigation projects where the Federal role is primary to the implementation.

COST SHARING LEGISLATION

Question. In your opinion, what are the prospects for getting cost-sharing legislation through the Senate this year?

Answer. I am optimistic. Public Law 99-88 broke the stalemate on revised cost-sharing and new construction starts. The Senate version should go to the floor early this spring and then to conference where differences can be resolved.

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BUY AMERICAN REQUIREMENTS

Question. Secretary Dawson, during the 1960's the Corps of Engineers had "Buy American" requirements for certain types of equipment, including turbine engines. To what extent does the Corps currently have in effect Buy American requirements apart from the usual six to twelve percent differentials under the Buy American Act?

Answer. A 50% Evaluation factor, consistent with Department of Defense regulations, is applied to our supply contracts. If there is a tie between a qualifying country, that is, a country with which we have a mutual defense treaty or similar agreement, and a U.S. supplier, award is in favor of the U.S. firm.

PROCUREMENT OF EXTRA-HIGH VOLTAGE (EHV) EQUIPMENT

Question. Has the Corps of Engineers purchased any extra-high voltage (EHV) equipment during the past five years? Please list any such items, along with purchase price and contractor.

Answer. The Corps has not purchased any extra-high voltage (EHV) equipment in the past five years. Per the Institute of Electrical and Electronics Engineers Standard, IEEE Standard 100, EHV is a term applied to voltage levels which are higher than 242,000 volts. Most of the electrical equipment purchased by the Corps in the last five years has been in the high voltage (72,500 volts through 242,000 volts) range.

Question. Does the Corps anticipate purchasing any EHV electrical equipment over the next several years? If it does, please outline those plans for the record.

Answer. The Corps does not anticipate purchasing any EHV electrical equipment over the next several years; however, limited procurement of high-voltage electrical equipment is planned.

ELK CREEK, OREGON

Question. Secretary Dawson, one project with which we have had some controversy involves the Elk Creek Dam in Oregon. There seems to have been some difference of opinion within the Administration over the prospects for that project at various times during the past year. First of all, could you bring us up to date on the current status of the project?

Answer. Road relocation was initiated in Fiscal Year 1985 and will be complete in Fiscal Year 1987. On January 24, 1986, a contract for construction of the main dam was awarded to the low bidder Ohbayashi Corporation, South San Francisco, California, for $62,782,658.

Question. What is the Corps of Engineers' current estimate of the benefits and costs associated with the third dam at Elk Creek? What is your position on whether that is the appropriate measure, or whether Elk Creek should be treated as a single, three-unit project?

Answer. The remaining benefit-remaining cost ratio based on Elk Creek being the next added unit of the Rouge River Basin System is 0.4 to 1.0 at 8⅝%. This incremental analysis consists of the benefits that the project adds to the existing system, and is one appropriate way to evaluate this project. The Applegate and Lost Creek dams prevent a major portion of the damages and completely regulate all of the smaller floods. Benefits at Elk Creek are limited to those realized from regulating only larger, less frequent floods.

Question. What is the status of construction on the road at Elk Creek?

Answer. The road relocation will be complete in the early part of Fiscal Year 1987.

Question. Can you comment on the fish and wildlife considerations associated with the third dam at Elk Creek?

Answer. The fish and wildlife considerations would include reservoir storage for release in the interest of dowstream fishery. Mitigation facilities would consist of fish production facilities at the Cole M. Rivers Hatchery at Lost Creek. In addition, a reservoir fishery will be established. There will be wildlife enhancement for upland game and other small animals in connection with the new irrigated land.

Questions Submitted by Congressman Young

ST. LOUIS HARBOR, MISSOURI

Question. I note that funding for the St. Louis Harbor project is not included in the FY 1987 budget request. What it the current status of the project?

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Answer. On July 19, 1985, the Assistant Secretary of the Army for Civil Works forwarded the report of the Chief of Engineers on St. Louis Harbor to the Office of Management and Budget with a recommendation that the study be considered complete, with no further Federal action warranted.

Question. Do you have money available to complete the project?

Answer. The study is considered complete. No further Federal action is warranted.

Question. If not, why haven't you requested funding to complete the project?

Answer. The responsibility to provide developable industrial land should not rest with the Federal Government.

Question. Would you please provide the committee with a complete explanation of the decision not to request funding for the project, including, if applicable, any determination about federal interest in the project?

Answer. It is the Department's policy that the Corps of Engineers should not financially participate in harbor proposals where the dredge material will be used to create new waterfront lands for industrial use. Projects similar to the St. Louis Harbor proposal are considered appropriate for accomplishment by non-Federal interests. The St. Louis Harbor project and several others like it have the potential to recover the construction and implementation costs through the sale or lease of the land benefited by the improvement.

In these times of severe budget constraints, we in the Federal Goverment are forced to take a much harder look at spending priorities. Projects which can finance themselves, such as the St. Louis Harbor project, do not fit within these priorities.

The Corps is bringing its study to a conclusion and will make available all its information and data. The Corps will also provide limited technical assistance within their authority to assist local interests in developing a local project.

Questions Submitted by Congressman Alexander

EASTERN ARKANSAS REGION COMPREHENSIVE STUDY

Question. Given the fact that the Congress provided funds for Fiscal 1986 for the continuation of the Eastern Arkansas Regional Comprehensive study, but did not require non-federal cost sharing for the activities the 1986 funds cover, doesn't the Corps' December, 1985, decision to require non-federal costs sharing for activities occurring after March 15, 1986, violate Congressional intent, as expressed by current law, on this project?

Answer. The budget amount of $300,000 requested for fiscal year 1986 for this study was to be used in conjunction with an equal amount of non-federal funds to continue the Federal share of the feasibility phase of the study, as stated in the budget justification sheets. On July 26, 1985, the State of Arkansas signed a conditional cost sharing contract whereby they agreed to share 50 percent of the costs of the feasibility phase of the study commencing 60 days after the date of decision to implement study cost sharing. Since the amount indicated in the Conference Report accompanying the Energy and Water Development Appropriation Act, 1986, was in agreement with the budget amount and the State of Arkansas had agreed to cost share it is our intention to continue the study on that basis.

LETTER OF ASSURANCE

Question. In January, the Corps instructed one or more of its Districts to require local sponsors of flood control projects to enter into cost sharing agreements which specifically contained an agreement to:

"Provide a cash flood control contribution consistent with Senate Resolution 366, as reported out of the Senate Environment and Public Works Committee on July 18, 1985, which reflects a compromise previously reached between the Administration and the Senate majority leadership. . . ."

The penalty for failure, in at least some instances, to sign such an agreement was the refusal of the Admininstration to request Fiscal 1987 funding for such project activities as "continuation planning and engineering on these projects. Current law does not require non-federal cost sharing for the CP&E activities affected.

Please provide a listing, by Corps District, State, and project title, of all projects against which the cost sharing agreement requirement action was taken.

Answer. Selection of the projects for new start planning and engineering (Continuation of Planning and Engineering, CP&E, and Advance Engineering and Design, AE&D) in the Fiscal Year 1987 budget request was a two step process. As the first step the Corps reviewed the available projects to determine a candidate

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group that provided high priority outputs of flood damage prevention and commercial navigation and had benefit-cost ratios of at least 1.2 to one. The second step was to request the local sponsors of these projects to provide implementation in accordance with the cost sharing and financing provisions of the agreement between the Administration and the Senate Majority Leadership. The projects for which the sponsors were contacted are as follows:

District	Project name	State
Alaska	St. Paul Harbor (CP&E)	AK
Memphis	West Memphis and Vicinity (CP&E)	AR
New England	New Haven Harbor (CP&E)	CT
Pacific Ocean	Hilo Harbor (CP&E)	HI
St. Paul	Root River at Houston (CP&E)	MN
Detroit	Duluth-Superior Harbor (CP&E)	MN & WI
St. Louis	Cape Girardeau-Jackson (CP&E)	MO
Buffalo	Ottawa (AE&D)	OH
Wilmington	Wilmington Harbor Northeast (Cape Fear) River (CP&E)	NC
St. Paul	Park River at Grafton, (CP&E)	ND
Albuquerque	Rio Grande Floodway, San Acacia to Bosque Del Apache (AE&D)	NM
Buffalo	Lorain Harbor (CP&E)	OH
Huntington	North Chillicothe (CP&E)	OH
Jacksonville	San Juan Harbor (CP&E)	PR
Charleston	Charleston Harbor, Wando River (CP&E)	SC
Memphis	Horn Lake Creek (CP&E)	TN & MS
Galveston	Brazos Island Harbor (42' Project) (CP&E)	TX

BASIS FOR COST SHARING

Question. Please provide the federal statute citation on which the Corps based its decision to require, as a part of the cost sharing agreement, the local sponsors to agree to a specific cost sharing arrangement not required by current law.

Answer. The Secretary of the Army is authorized to receive nonfederal contributions to be expended in connection with funds appropriated by the United States for authorized water resources activities pursuant to the provisions of Section 4 of the Act of March 4, 1915 (38 Stat. 1053; 33 USC 560) and Section 1 of the Act of July 19, 1937 (50 Stat. 518; 33 USC 701h). Moreover, nonfederal participation in the water resources projects that are authorized by the first paragraph of Chapter IV of the Supplemental Appropriations Act, 1985 (P.L. 99-88) is to be ". . . under terms and conditions acceptable to the Secretary of the Army (or under terms and conditions provided for in subsequent legislation when enacted into law) . . .".

Question. Other than the 1915 and 1937 laws which permit, but do not require, the Corps to collect non-federal contributions, in instances where the Corps is requiring cost sharing for activities on which current federal law does not require such cost sharing, what is the legal basis for this action?

Answer. As you recognized, we are authorized to receive non-Federal contributions to be expended in connection with funds appropriated by the United States for authorized activities. For all new starts, we have been working closely with the sponsors of the projects that were authorized by the first paragraph of the FY 1985 Supplemental. Construction is to be initiated with funds appropriated by the Supplemental, provided that the contractual terms and conditions of the required agreements are acceptable to the Secretary of the Army.

Question. Doesn't this action, of requesting at least some of the local sponsors to sign such an agreement, undermine the validity and legitimacy of all data which the Corps may have collected on behalf of the President concerning willingness of non-Federal sponsors to assume a non-Federal project cost share level in excess of that required by current law?

Answer. No. The voluntary participation by the sponsors of these projects has helped support the validity of the proposals for increased cost sharing and financing during construction. Our success to date in getting letters of assurance for the required participation underscores the value of these projects both from an economic and a marketing standpoint.

Mr. BEVILL. This committee now stands adjourned until 10:00 o'clock in the morning.

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WEDNESDAY, FEBRUARY 19, 1986.

FY 1987 REMAINING ITEMS AND FY 1986 TRANSFER BUDGET REQUEST

WITNESSES

MAJ. GEN. HENRY J. HATCH, DIRECTOR OF CIVIL WORKS
DON B. CLUFF, CHIEF, PROGRAMS DIVISION, CIVIL WORKS
JOE L. ADKINS, ACTING CHIEF, DREDGING DIVISION, WATER RESOURCES SUPPORT CENTER
CAPT. JACK M. BEARD, ATTORNEY ADVISOR (INTERNATIONAL AGREEMENTS) AND SPECIAL ASSISTANT FOR U.S.-CHINA AFFAIRS, OFFICE OF CHIEF COUNSEL
LEWIS H. BLAKEY, CHIEF, PLANNING DIVISION, CIVIL WORKS
RICHARD J. COLVER, DEPUTY DIRECTOR OF INFORMATION MANAGEMENT
LLOYD A. DUSCHA, DEPUTY DIRECTOR OF ENGINEERING AND CONSTRUCTION
EARL E. EIKER, ACTING CHIEF, HYDRAULICS AND HYDROLOGY DIVISION, CIVIL WORKS
CECIL G. GOAD, CHIEF, OPERATIONS AND READINESS DIVISION, CIVIL WORKS
HENRY S. POINTON, JR., ASSISTANT CHIEF, PROGRAMS DIVISION, CIVIL WORKS
WILLIAM E. ROPER, ASSISTANT DIRECTOR OF RESEARCH AND DEVELOPMENT (CIVIL WORKS)
BORY STEINBERG, CHIEF, POLICY, REVIEW, AND INITIATIVES DIVISION, CIVIL WORKS

Mr. BEVILL. The meeting will come to order.

We are glad to have each of you here again. General Hatch, proceed as you wish.

STATEMENT OF GENERAL HATCH

INTRODUCTION

General HATCH. Sir, I will begin with my summary remarks, and we will provide the information in a more detailed statement for the record.

Again, sir, I am honored to appear before you. With me at the table are Mr. Don Cluff, to my immediate right, Chief of our Programs Division, introduced yesterday; and also Dr. Bory Steinberg, our Chief of Policy, Review, and Initiatives Division, who was with us yesterday. To my left, Dr. Lewis Blakey, Chief of the Planning Division, and Dr. William Roper, our Assistant Director of Research and Development for Civil Works.

Mr. BEVILL. You've got a lot of brains around you here this morning.

General HATCH. We do have a lot of them, sir.

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Let me point out one other member in the room. As you know, most of the folks behind me are from the Corps and they will assist me if I get into trouble, but I would like to point out the senior engineer of the Corps of Engineers who is with me today, Mr. Lloyd Duscha, who is our Deputy Director of Engineering and Construction.

Mr. BEVILL. Good to have you with us.

General HATCH. Also I would like to highlight some of the 1987 budget requests for Remaining Items. I will also discuss the transfer request for FY 1986, which involves the transfer of $3 million of O and M funds to the General Expenses Appropriation. Then I will ask Dr. Roper to present a very brief overview and representative sampling of some of our current R and D activities and recent accomplishments.

REMAINING ITEMS TOTALS

The total budget request for Remaining Items is $313.7 million, of which $42.8 million is for General Investigations; $88 million for Construction, General; $30.9 million for Operation and Maintenance, General; $25 million for Flood Control and Coastal Emergencies; $115 million for General Expenses; and $12 million for the Revolving Fund.

GENERAL INVESTIGATIONS

Major items under General Investigations include Cooperation with Other Federal Agencies, States, and Non-Federal Interests, as well as Foreign Governments, $6.5 million; Collection and Study of Basic Data, $12.8 million, of which the largest portion is $8.8 million for Flood Plain Management Services, and $1.8 million for Coastal Field Data Collection; and Research and Development, $23 million.

COOPERATIVE EFFORTS WITH FOREIGN GOVERNMENTS

In recent years, the Corps has been requested on several occasions to cooperate with the governments of developing nations by evaluating the country's needs for assistance on development of water and related land resources, by exchanging scientific and technological information, and by providing technical advice. Generally, such cooperation and assistance has been provided on behalf of or in conjunction with the foreign programs of other U.S. Government agencies, such as the Trade and Development Program of the International Development Cooperation Agency, and the Agency for International Development, both of the Department of State; or through offices of the Departments of Commerce and Transportation; or through a multi-national organization in which the U.S. Government participates, such as the United Nations Development Program.

On occasion, the Corps is also requested to collaborate with the agencies of nations having more mature economies, by engaging in mutually beneficial research activities, by exchanging useful scientific and technological information and expertise, or by participating in other cooperative activities in water resources science and

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technology. The spectrum of the Corps' cooperation with foreign governments in water resources may include such activities as: exchange of scientific data and technical publications, handbooks, and manuals; seminars and workshops in the United States and abroad; training programs; joint research projects; exchange of specialists and experts; and special studies and technical advice in water resources development.

Benefits to the United States from Corps participation in these activities include: improved U.S. knowledge and expertise, with valuable research and development opportunities; increased opportunities for involvement of private-sector American architect-engineers and contractors; facilitating realization of the potential export markets for American firms supplying construction equipment, pumps, turbines, generators, and other electrical equipment, and scientific and engineering instruments; improved U.S. knowledge and expertise; enhanced mobilization and construction capability; and enhanced U.S. image through assistance to developing nations.

In almost all cases, the Corps cooperates with foreign governments on a reimbursable basis; that is, we do not request funds for these activities. However, where the cooperative activities are clearly of mutual benefit to the Corps and to the foreign government or its agency, particularly in the research and development area, each side bears the expenses of its own participation in these activities.

Heretofore, the Corps has been engaged in a very modest level of these mutually beneficial scientific and technological activities without explicitly budgeting for them, and it has been funding them on an ad hoc basis and not out of a single account. During this period, the Corps has informed the Appropriations Committees or staffs on these activities, usually informally and orally, but on occasion in regular oral testimony and through written questions-and-answers and inserts-for-the-record.

It is considered prudent that the expenses associated with and that will be incurred as a result of certain cooperative efforts with foreign governments will be charged to a new fiscal sub-item entitled "Cooperative Efforts with Foreign Governments," in the General Investigations appropriation structure under the retitled fiscal class "Cooperation with Other Federal Agencies, States, non-Federal Interests, and Foreign Governments"; that this program be identified to the Appropriations Committees in the budget justification sheets; and that clear statutory authority for expenditures under this program be enunciated by having the Appropriation Act language contain this General Investigations proviso: "Provided, that $250,000 is available for Cooperative Efforts with Foreign Governments pertaining to river and harbor and flood control improvements."

FLOOD PLAIN MANAGEMENT SERVICES

Under our Flood Plain Management Services Program, we compile and disseminate data on floods and flood damage potential, and we provide guidance on flood-related planning to Federal, State, and local agencies to support planning and implementation

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actions which reduce the flood hazard through wise use of flood plains. In 1985, we responded to 62,000 requests from Federal and non-Federal agencies, communities, firms, and individuals for flood-related information, interpretation, and guidance related to properties valued at over $10 billion.

COASTAL FIELD DATA COLLECTION

To properly accomplish our coastal engineering mission, including planning, design, construction, and operation and maintenance of coastal and lake navigation, flood control, and shore protection projects, the Corps requires a good understanding of dynamic forces that are at play in the coastal zone. We need reliable, high-quality, long-term data on winds and waves; severe storm and hurricane effects; tidal and longshore currents and water levels; erosion and accretion rates; shoreline and beach profile changes and trends; sediment characteristics and sources; and the interrelationships among these significant parameters. Such data are presently not generally available, or are unreliable and of poor quality.

The Coastal Field Data Collection Program, managed by the Coastal Engineering Research Center of our Waterways Experiment Station, currently develops some of the more critical information, but only for limited areas of the U.S. coastline. Its outputs are widely used by others in Government and by the academic and private sectors.

RESEARCH AND DEVELOPMENT

The R and D budget request under General Investigations is $23 million. It is an excellent investment in improving efficiency and reducing costs. It has been producing early and continuing payoffs from new technological applications, increased reliability and effectiveness, more assured safety, and better decision-making.

CONSTRUCTION, GENERAL

The $88 million request for Construction, General items includes $48 million for the six Small Projects Programs under Continuing Authorities, $21 million for the Dam Safety Assurance Program, $8 million for Aquatic Plant Control, and $11 million for Employees' Compensation Payments to the Department of Labor.

CONTINUING AUTHORITIES PROGRAMS

The budget request for the Small Projects Programs reflects continuation of the changes we have made in these programs this current year, namely: cost sharing of decision document studies and of the projects, paralleling that for specifically authorized studies and projects; prioritizing the meeting of major needs for flood damage protection, commercial navigation, and emergency bank protection; and according a low budget priority to primarily recreation projects. The Continuing Authorities Programs of Small Projects remain popular, and we are confident of our sustained success with them in the future.

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DAM SAFETY ASSURANCE

With regard to Dam Safety Assurance, none of the over 600 completed Corps dams is in imminent danger of failure. However, in the light of modern scientific knowledge, engineering standards, and experience gained with respect to the potential for earthquakes and extremely large floods, we now consider that the risk for severe damage to or failure of some of our structures may be higher than originally anticipated. We have selected 36 dam projects as candidates most likely to require selective modification of features to meet the requisite safety standards and assure that the projects will function as originally intended.

The FY 1987 budget request for the overall Dam Safety Assurance Program is $38.5 million, of which $17.5 million is for continuation of construction for modification of five projects started in FY 1985 and FY 1986, and funds for these projects are included in the budget request for each applicable Division. The $21 million balance of this budget request—the portion included under Remaining Items—is to be applied toward initiation of construction on additional Dam Safety Assurance new starts which may be approved in FY 1986 and 1987 as a result of studies now underway.

OPERATION AND MAINTENANCE, GENERAL

Under Operation and Maintenance, we budgeted $30.9 million for several items. I will briefly discuss the two R and D items, River Ice Management—RIM—research program, and REMR—Repair, Evaluation, Maintenance, and Rehabilitation research program; and then the National Emergency Preparedness Program.

RIVER ICE MANAGEMENT (RIM) RESEARCH PROGRAM

Our request for the fifth year of the 6-year, $12 million River Ice Management or RIM research program is $2.2 million. This R and D aims at developing ice control techniques in river systems, to permit cost-effective, reliable, and safe waterborne navigation throughout the year without adverse environmental effects. Ice in such rivers essentially constitutes a major physical impediment to winter navigation and could generate huge economic losses, particularly in areas dependent on year-round navigation. Ice-prone river systems serve 19 States with 45 percent of the Nation's population, are conduits to eight other river States, and connect the U.S. heartland to worldwide markets through the Gulf of Mexico, the ports in the Northwest, the Great Lakes, and the St. Lawrence Seaway.

REPAIR, EVALUATION, MAINTENANCE, AND REHABILITATION (REMR)

We are requesting $7.8 million for the fourth year of the 6-year, $35 million Repair, Evaluation, Maintenance, and Rehabilitation or REMR research program. Of the approximately 600 hydraulic structures operated and maintained by the Corps, over 70 percent are over 20 years old, almost half are over 30, and one-third are over 40. These figures are skewed, however, because many of our non-navigation dams were built in the 1950's and most of our navigation dams and lock chambers were built much earlier. Fifty-

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seven percent of our navigation dams and lock chambers are more than 40 years old, and 38 percent of these structures have already reached or exceeded their designed service life.

By the turn of the century, we expect waterborne traffic to grow significantly, further increasing stress on the efficient operation and maintenance of these facilities. All this adds up to a significant infrastructure problem. Other structures we operate and maintain include thousands of miles of roads, breakwaters, jetties, groins, revetments, levees, floodwalls, and pumping stations. There is also a vast array of electrical and mechanical equipment. Although there is a lot of work yet to do, we have already been generating a steady stream of high-quality technology transfer products for distribution throughout the Corps and to the Bureau of Reclamation, the TVA, and other Federal agencies, State and local governments, and the private sector.

NATIONAL EMERGENCY PREPAREDNESS PROGRAMS

The Corps' FY 1987 National Emergency Preparedness Program was formulated to continue the implementation of a comprehensive 5-year effort to develop and maintain a capability to respond decisively and effectively to any national emergency. The budget request of $13.5 million generally reflects a maintenance program of existing activities and a modest growth of the emergency water planning mission and the macroanalysis program.

Specifically, the funds will be used to maintain national emergency preparedness plans, to train personnel to meet their assigned responsibilities in a national emergency, and to supply and maintain emergency facilities. Some scheduled activities include: planned expansion of the Emergency Water Planning Program through the involvement of additional Corps Districts; upgrading and conversion of existing facilities to emergency relocation sites, to increase the survivability of the Corps command and control structure; upgrading of existing substandard emergency operations centers; and expansion of the Corps' macroanalysis study program to analyze, on a regional basis, the Corps' requirements and capabilities during a mobilization and other national emergencies.

GENERAL EXPENSES

The FY 1987 request for General Expenses is $115 million, to provide for the executive direction and management of the overall Civil Works Program through the Office of the Chief of Engineers and its 11 Division Offices; the Board of Engineers for Rivers and Harbors; the Coastal Engineering Research Board; a portion of the Engineering Automation Support Activity; and a portion of the Water Resources Support Center.

REVOLVING FUND—PLANT REPLACEMENT AND IMPROVEMENT PROGRAM

Our 1987 Plant Replacement and Improvement Program, or PRIP, expenditures under the Revolving Fund are estimated at $83 million. This includes $12 million in requested new budget authority, of which $10 million is for construction of a dustpan dredge replacement and $2 million is for automatic data processing equip-

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ment and software conversion under the Corps of Engineers Automation Plan. Appropriations were provided for both these items last year, and both require such sizeable expenditures over short periods, they cannot be reasonably financed from Revolving Fund resources without seriously impacting our regular program. The remaining $71 million of PRIP expenditures will be financed from the funds generated by the Revolving Fund rental charge for use of our plant and equipment.

TRANSFER BUDGET REQUEST FOR FY 1986

For FY 1986, an additional $3 million in the General Expenses appropriation is required to restore a portion of the overall 5 percent pay cut proposed in the original FY 1986 budget. We propose that $3 million be transferred from the FY 1986 Operation and Maintenance, General account to the FY 1986 General Expenses account. The Corps of Engineers did not have the pay cut restored in the Energy and Water Development Appropriation Act of 1986, as proposed by the President in an FY 1986 budget amendment, because of the timing of Congressional action on the bill. The total reduction in the Corps' Civil Works program was $30 million, which we propose to absorb with some difficulty, except that some relief is necessary in the GE appropriation.

CONCLUSION

Mr. Chairman, this concludes my summary remarks. With your permission, I would like Dr. Roper to provide a brief slide show on our R and D activities.

Mr. BEVILL. He may do so.

[The complete statement of General Hatch follows:]

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DEPARTMENT OF THE ARMY - CORPS OF ENGINEERS
OFFICE OF THE CHIEF OF ENGINEERS

SUMMARY REMARKS OF MAJOR GENERAL HENRY J. HATCH
DIRECTOR OF CIVIL WORKS
ON THE REMAINING ITEMS OF THE FISCAL YEAR 1987 CIVIL WORKS BUDGET
AND ON THE FISCAL YEAR 1986 TRANSFER BUDGET REQUEST

PRESENTED BEFORE THE SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT,
COMMITTEE ON APPROPRIATIONS, HOUSE OF REPRESENTATIVES, FEBRUARY 19, 1986

INTRODUCTION

Mr. Chairman and members of the Subcommittee, I am pleased to appear before you. With me today are: Mr. Don Cluff, Chief, Programs Division, Civil Works; Mr. Joe Adkins, Acting Chief, Dredging Division, Water Resources Support Center; Capt. Jack Beard, Attorney Advisor, Office of the Chief Counsel; Dr. Lewis Blakey, Chief, Planning Division, Civil Works; Mr. Richard Colver, Deputy Director for Information Management; Mr. Lloyd Duscha, Deputy Director of Engineering and Construction; Mr. Earl Eiker, Acting Chief, Hydraulics and Hydrology Division, Civil Works; Mr. Cecil Goad, Chief, Operations and Readiness Division, Civil Works; Mr. Henry Pointon, Assistant Chief, Programs Division, Civil Works; Dr. William Roper, Assistant Director of Research and Development (Civil Works); and Dr. Bory Steinberg, Chief, Policy, Review, and Initiatives Division, Civil Works.

I would like to note some highlights of the FY 1987 budget requests for Remaining Items, which include our nationwide programs and activities not covered in the presentations of the Division Engineers. These also include the General Expenses appropriation, which provides for executive direction and management of the Civil Works program through the Office of the Chief of Engineers and the Division Offices. I will touch on major items of plant and equipment proposed for procurement under the Revolving Fund, and also briefly discuss the Transfer Budget Request for FY 1986, which involves the transfer of Operation and Maintenance, General funds to the General Expenses

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appropriation. Following these, I will ask Dr. Roper to present a brief overview and representative sampling of some of our current R&D activities and recent accomplishments.

REMAINING ITEMS OVERVIEW

The total for Remaining Items in the budget request is $313,724,000, of which $42,790,000 is for General Investigations, $87,973,000 for Construction, General, $30,961,000 for Operation and Maintenance, General, $25,000,000 for Flood Control and Coastal Emergencies, $115,000,000 for General Expenses, and $12,000,000 for the Revolving Fund.

ACTIVITIES UNDER THE GENERAL INVESTIGATIONS APPROPRIATION

REVIEW OF AUTHORIZED PROJECTS--REVIEW FOR DEAUTHORIZATION

The Restudy of Deferred Projects and the Sec. 216 Review of Completed Projects activities are budgeted and individually justified with the regular feasibility studies of the applicable Division Engineers. Thus, the only Remaining Item under Review of Authorized Projects for FY 1987 is the Review for Deauthorization activity, under Sec. 12 of the Water Resources Development Act of 1974, for which $200,000 is requested to initiate and complete reviews of 40 unconstructed projects that have been authorized for at least eight years and with no appropriations in the last eight years. From these reviews, the Office of the Chief of Engineers prepares an annual report to Congress recommending deauthorization of projects with no likelihood of construction in the foreseeable future. Based on recommendations in the 10 such annual reports to Congress, 476 projects have been deauthorized to date.

COOPERATION WITH OTHER FEDERAL AGENCIES, STATES, NON-FEDERAL INTERESTS, AND FOREIGN GOVERNMENTS

The budget request for Cooperation with Other Federal Agencies, States, non-Federal Interests, and Foreign Governments is $6,750,000, an increase of $980,000 from the FY 1986 allocation of $5,770,000. A major portion of this

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request is $3,000,000 for Planning Assistance to States, including all 50 States, the District of Columbia, Puerto Rico, and the Pacific Islands. Under this program, we coordinate with and assist State planners to prepare comprehensive plans for conservation, development, and utilization of their water and related resources; help them become more active and effective working partners with the Federal Government in resolving water resources problems of mutual interest; and submit reports and recommendations to Congress on appropriate Federal partnership in execution of cooperative plans. Another major portion of the request is $2,900,000 for Special Investigations, including: review of applications referred to us by the Federal Energy Commission for permits or licenses for non-Federal hydropower developments at, or affecting, Corps water resource projects; and review of reports and environmental impact statements of other agencies.

Cooperative Efforts with Foreign Governments. In recent years, the Corps has been requested on several occasions to cooperate with the governments of developing nations by evaluating the country's needs for assistance on development of water and related land resources, by exchanging scientific and technological information, and by providing technical advice. Generally, such cooperation and assistance has been provided on behalf of or in conjunction with the foreign programs of other U.S. Government agencies, such as the Trade and Development Program of the International Development Cooperation Agency, and the Agency for International Development, both of the Department of State; or through offices of the Departments of Commerce and Transportation; or through a multi-national organization in which the U.S. Government participates, such as the United Nations Development Program. On occasion, the Corps is also requested to collaborate with the agencies of nations having more mature economies, by engaging in mutually beneficial research activities, by exchanging useful scientific and technological information and

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expertise, or by participating in other cooperative activities in water resources science and technology. The spectrum of the Corps' cooperation with foreign governments in water resources may include such activities as: exchange of scientific data and technical publications, handbooks, and manuals; seminars and workshops in the U.S. and abroad; training programs; joint research projects; exchange of specialists and experts; and special studies and technical advice in water resources development. Benefits to the U.S. from Corps participation in these activities include: improved U.S. knowledge and expertise with valuable research and development opportunities; increased opportunties for involvement of private-sector American architect-engineers and contractors; facilitating realization of the potential export markets for American firms supplying construction equipment, pumps and turbines, generators and other electrical equipment, and scientific and engineering instruments; improved U.S. knowledge and expertise; enhanced mobilization and construction capability; and enhanced U.S. image through assistance to developing nations.

In almost all cases, the Corps cooperates with foreign governments on a reimbursable basis. However, where the cooperative activities are clearly of mutual benefit to the Corps and to the foreign government or its agency, particularly in the research and development area, each side bears the expenses of its own participation in these activities. Heretofore, the Corps has been engaged in a very modest level of these mutually beneficial cooperative scientific and technological activities without explicitly budgeting for them, and has been funding them on an ad hoc basis and not out of a single account. During this period, the Corps has informed the Appropriations Committees or Staffs on these activities, usually informally and orally, but on occasion in regular oral testimony and through written Questions-and-Answers and Inserts-for-the-Record. It is considered prudent

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that expenses associated with and which will be incurred as a result of certain cooperative efforts with foreign governments will be charged to a new fiscal subitem, "Cooperative Efforts with Foreign Governments," in the General Investigations Appropriation Structure under the retitled fiscal class "Cooperation with Other Federal Agencies, States, Non-Federal Interests, and Foreign Governments"; that this program be identified to the Appropriations Committees in the Budget Justification Sheets; and that clear statutory authority for expenditures under this program be enunciated by having the Appropriation Act language contain this General Investigations proviso: "Provided, That $250,000 is available for cooperative efforts with foreign governments pertaining to river and harbor and flood control improvements."

COLLECTION AND STUDY OF BASIC DATA

The request for $12,840,000 for Collection and Study of Basic Data is $1,285,000 more than the FY 1986 allocation. There are nine programs under this category, and I will discuss individually the two largest programs, namely, Flood Plain Management Services and Coastal Field Data Collection. The other seven programs, which total $2,240,000 and remain essentially level-funded, are: Stream Gaging ($535,000), for which we transfer funds to the U. S. Geological Survey; Precipitation Studies ($380,000), for which we transfer funds to the National Weather Service; International Waters Studies ($100,000); Hydrologic Studies ($260,000); Scientific and Technical Information Centers ($130,000); Transportation Systems ($600,000); and Environmental Data Studies ($235,000).

Flood Plain Management Services. The largest portion of the Collection and Study of Basic Data request is $8,800,000 for the Flood Plain Management Services program, an increase of $1,000,000 over the FY 1986 allocation. Under this program, we compile and disseminate data on stream, lake, and coastal floods and flood damage potential; and we provide pamphlets, training

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programs, and direct advice and guidance to Federal, State, and local agencies to support, strengthen, and improve their flood-related planning and implementation actions, including flood-proofing, zoning, early warning systems, pre-disaster evacuation and preparedness studies and exercises, and other non-structural measures to reduce the flood hazard or mitigate the losses through wise use of flood plains. In 1985, we responded to 62,000 requests from Federal and non-Federal agencies, communities, firms, and individuals for flood information, interpretation, and guidance related to properties valued at over ten billion dollars. The Corps participated, with the Federal Emergency Management Agency and local governments, in conducting pre-disaster hurricane evacuation and preparedness studies for mobilizing local community responsiveness to natural disasters in high-hazard coastal areas in the Florida Panhandle, Alabama, Mississippi, Georgia, South Carolina, North Carolina, Virginia, Maryland, Delaware, New Jersey, Hawaii, and Puerto Rico. The Corps also prepared flood-proofing studies; provided technical assistance for updating and improving mathematical models of flood plain hydrology and hydraulics; and developed training programs in flood plain hydrology and hydraulics.

Coastal Field Data Collection. To properly accomplish our coastal engineering mission, including planning, design, construction, and operation and maintenance of coastal and lake navigation, flood control, and shore protection projects, the Corps requires a better understanding of severe storm and hurricane effects, and high-quality long-term data on: wind and wave climatology; tidal and longshore currents and water levels; erosion and accretion rates, and their manifestations as variations and trends in shoreline, beach profile, and nearshore bottom configurations; sediment characteristics, transport, and deposition; and other geographical and geomorphological parameters. Such data are generally not presently available, or are unreli-

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able and of poor quality, or are statistically inadequate because they are too sparsely distributed with respect to time and place. Ideally, the requisite records would already be at hand at each project site, and with adequate monitoring of local conditions continuing to provide the information needed for reconfirming, refining, and adjusting the baseline data, as desirable. However, such intensive coverage is not practical because of the prohibitive cost and the lead time required. For example, sufficient time is not available prior to or during the preauthorization and preconstruction phases of projects to accumulate the years of baseline date required for adequate assessment of technical, economic, and environmental feasibility, and for consequent cost-effective project execution, operation, and maintenance. Nor is there a study/project source of funding such data activities during the unfunded hiatus periods that often extend between completion of the preauthor- ization study and initiation of post-authorization detailed planning, and between completion of the latter and initiation of construction. Accordingly, the Corps has established the Coastal Field Data Collection Program that gathers and analyzes data on a regional basis and statistically enhances and extends this data base so that it can be used for individual studies, projects, and other activities. The $1,800,000 requested for FY 1987 is the same amount as the FY 1986 allocation.

This program has considerable applicability to others concerned outside the Corps, and its outputs are widely utilized by numerous interested Federal, State, and local agencies, and by the academic and private sectors. The related activities undertaken and the information produced by the entire community of interest in coastal engineering, climatology, and other facets of the coastal zone are mutually shared by all concerned. Also contributing significantly to extending our limited funding and manpower resources is our widespread use of volunteer observers, generally in coordination with State

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agencies, for the Visual Surf and Nearshore Current Data component of our program. We have come to rely on the volunteers to provide us with relatively inexpensive but sufficiently accurate and highly useful visual observations of surf conditions and nearshore current patterns, including breaker heights and period, direction of wave approach, and longshore current velocities, which we factor into our estimates of sand transport rates and shoreline erosion/accretion rates, and which we use to interpolate our wave gage data to develop estimates of the characteristics of waves and other conditions at ungaged projects. We have also developed cooperative wave gaging efforts with the States of California, Florida, and Alaska. Seventeen program gages have their data processed and published through the California system at Scripps Institute of Oceanography. We obtain data from eleven gages around the Florida coast from the University of Florida system. And in Alaska, three gages have been deployed and operated by the Corps with funding assistance from the State.

RESEARCH AND DEVELOPMENT

Our budget request for Research and Development under General Investigations is $23,000,000, an increase of $3,000,000 over the FY 1986 allocation. However, compared to the FY 1981 allocation of $21,278,000 for GI-R&D, the FY 1987 request has actually regressed in terms of equivalent dollars. Nonetheless, this increase is a step in the right direction and reflects the Corps dedication to achieve greater efficiencies and economies in all its Civil Works mission areas. Particular emphasis in the Civil Works R&D program is being placed on procedures and techniques to help Corps designers, engineers, planners, managers, and operations personnel accomplish their jobs better and at less cost. In addition, $12,185,000, a decrease of $1,775,000 from the FY 1986 allocation, is included under other appropriation titles for R&D work closely related and integral to activities funded under those appropriations.

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Our total budget request for the overall Corps Civil Works R&D program thus amounts to $35,185,000, or slightly over 1 percent of the Civil Works program for FY 1987 and, in my judgment, is quite cost-effective. The Civil Works R&D program is closely scrutinized and managed by my own staff, and by the Engineering and Construction Directorate and the Research and Development Directorate. Our R&D has been producing early and continuing payoffs resulting from new technology applications, increased reliability and effectiveness, more assured safety, and better decision-making. During periods of tightly constrained Civil Works funding and reduced manpower, the R&D program is a critical Corps necessity for uncovering ways of doing more with less resources.

ACTIVITIES UNDER THE CONSTRUCTION, GENERAL APPROPRIATION

CONTINUING AUTHORITIES PROGRAMS

The request for the six Continuing Authorities Programs funded under Construction, General is $48,000,000, a decrease of $2,965,000 from the FY 1986 allocation. About one-third of the budget request covers funding of construction new starts, mostly to provide solutions to flood control and emergency streambank problems under the Section 205 and Section 14 programs. The remainder of the request will be used to initiate and continue planning and design, and to continue construction under these programs that consist of projects for navigation, flood damage prevention, beach erosion control, emergency streambank and shoreline erosion protection, and clearing and snagging.

The request for FY 1987 reflects continuation of changes we have made in both the management and priorities in the Continuing Authorities Programs in FY 1986. I refer to study and project cost sharing, and continuing to accord a low budget priority to primarily recreation projects. More precisely, the Continuing Authorities Programs decision document studies will be treated with respect to cost-sharing comparably to specifically authorized feasibility

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phase studies. The Continuing Authorities Small Projects Programs remain popular, and we are confident of our sustained success in implementing these programs in the future.

Similarly, with the objective of treating these small projects comparably to construction new starts on specifically authorized projects, project cost sharing will be applicable to these projects under all the Continuing Authorities Programs during FY 1986 except Section 14. on which construction contracts are to be awarded after May 15, 1986. The new procedure will be applicable to construction of Section 14 projects in FY 1987.

With regard to recreation-oriented studies and projects, we are not funding continuation of any activity in the Continuing Authorities Program for those projects whose benefits from major needs, defined as flood damage reduction, commercial navigation, and emergency streambank protection, are not sufficient to achieve a benefit-cost ratio greater than unity for the entire project.

DAM SAFETY ASSURANCE

None of the over 600 completed Corps dams is in imminent danger of failure. However, in the light of modern-day scientific knowledge, engineering standards, and experience gained with respect to the potential for earthquakes and extremely large floods, we now consider that the risk for severe damage to or failure of some of these structures may be higher than originally anticipated. We have selected 35 dam projects as candidates most likely to require selective modification of features to meet the requisite safety standards and assure that the project will function as originally intended. The FY 1987 budget request for the overall Dam Safety Assurance program is $38,460,000, of which $17,460,000 (including $3,500,000 for one project under the Flood Control, Mississippi River and Tributaries appropriation title) is for continuation of construction for modification

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of five projects started in FY 1985 and FY 1986; and funds for these projects are included in the budget request for each applicable Division. The $21,000,000 balance of this budget request, the portion included under Remaining Items, is to be applied toward initiation of construction on additional Dam Safety Assurance new starts which may be approved in FY 1986 and FY 1987 as a result of studies now underway.

AQUATIC PLANT CONTROL

The nationwide Aquatic Plant Control program is budgeted for $8,000,000, a decrease of $1,000,000 from the FY 1986 allocation. This is a cooperative Federal-State program, aimed at controlling aquatic weed infestations which have significant economic or environmental effects on the use of our waterways. Control of problem aquatic plants provides benefits for navigation, flood control, major drainage, agriculture, water-based recreation, fish and wildlife, and public health. The budgeted amount will permit needed planning and control operations in 21 States and Puerto Rico, and will permit continuation of our important aquatic plant research activities. The FY 1987 request includes $2,220,000 for research, $458,000 for planning, and $5,322,000 for control operations. Costs for research and planning are 100 percent Federal. Control operations must be cost shared. Under the requirements of P. L. 85-500, States must provide at least 30 percent of the cost of control operations. Cost sharing under proposed legislation (S. 1567) would require 50 percent non-Federal participation in control operations. Control programs utilize various biological, chemical, mechanical, and physical-environmental tools and techniques. The research component is aimed at improving the effectiveness, economics, and safety of control measures and their suitable combinations. About 1.6 million acres of streams and lakes are infested with problem aquatic plants. The aquatic plant problem was at one time confined largely to the Southwestern States, but the

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problem has become an increasing concern in the Northwest, Northeast, and now in the Potomac River.

EMPLOYEES' COMPENSATION

The budget includes $10,973,000, an increase of $332,000 over FY 1986, for transfer to the Department of Labor to replenish the Employees' Compensation Fund for costs charged to that Fund during the period July 1, 1984 through June 30, 1985 for payment of benefits and claims on account of injury or death of Corps of Engineers employees carried under the Civil Works program.

ACTIVITIES UNDER THE OPERATION AND MAINTENANCE, GENERAL APPROPRIATION

MONITORING OF COMPLETED COASTAL PROJECTS

The budget request of $1,200,000 for Monitoring of Completed Coastal Projects, an increase of $200,000 over the FY 1986 allocation, will provide for the ongoing program of monitoring critical coastal engineering parameters of selected coastal projects to determine and analyze project-induced changes in topography, currents, waves, flushing characteristics, tidal stages, and other hydrodynamic phenomena. The data collected and analyzed are used to evaluate project performance in relation to design expectations and projected benefits, and to develop improved designs for coastal projects and desirable modifications in their operation and maintenance modes. In addition to serving Corps needs, this program is producing and disseminating data and information useful to other Federal, State, and local agencies concerned with planning and regulating the conservation, development, and use of coastal and offshore resources and values.

RIVER ICE MANAGEMENT (RIM) RESEARCH PROGRAM

The request for the fifth year of the six-year, $12,000,000 River Ice Management R&D program is $2,205,000, a decrease of $1,645,000 from FY 1986. This R&D is aimed at developing ice control techniques, including structural

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and operational solutions to ice problems in river systems, to permit cost-effective, reliable, and safe waterborne navigation throughout the year without adverse environmental effects. Ice-prone rivers, directly serving 19 States with 45 percent of the Nation's population, constitute a major physical impediment to winter navigation and could generate huge economic losses, particularly in areas dependent on year-round navigation. These rivers also serve as conduits to eight other river States and connect the U.S. heartland to worldwide markets through the Gulf of Mexico, the ports of the northwest, the Great Lakes, and the St. Lawrence Seaway. If tonnage on domestic waterways increases sharply over the next 15 years, as is anticipated, ice management will become an even more critical problem for the Corps.

REPAIR, EVALUATION, MAINTENANCE, AND REHABILITATION (REMR) RESEARCH PROGRAM

Since FY 1984, our O&M appropriations have been larger than Construction, General. O&M is now not only our largest appropriation account, but this trend in its growth will continue. Of the approximately 600 major hydraulic structures operated and maintained by the Corps, such as flood control dams, lock chambers, and powerhouses, over 70 percent are over 20 years old, almost half are over 30 years old, and one-third are over 40 years old. These figures are skewed, however, because many of our non-navigation dams were built in the 1950s, and most of our navigation dams and lock chambers were built much earlier. Fifty-seven percent of our navigation dams and lock chambers are more than 40 years old, and 38 percent of these navigation structures have already reached or exceeded their designed service life. By the turn of the century, we expect waterborne traffic to grow significantly, further increasing stress on the efficient operation and maintenance of these facilities. We have some navigation structure bottlenecks now, and all this adds up to a significant infrastructure problem. Other structures we operate and maintain include thousands of miles of roads, breakwaters, jetties, groins,

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revetments, levees, floodwalls, and pumping stations; and in addition to structures, a vast array of electrical and mechanical equipment. Our experience shows that repair and rehabilitation of older facilities requires various types of expertise, some of which are different from those required for design and construction of new structures. Accordingly, we are requesting $7,780,000, which is $90,000 less than the FY 1986 allocation, for the fourth year of the six-year, $35,000,000 Repair, Evaluation, Maintenance, and Rehabilitation (REMR) R&D program. FY 1986 and 1987 are peak years for the REMR program, and we are generating a steady stream of high-quality technology transfer products for distribution throughout the Corps and to the Bureau of Reclamation, TVA, and other Federal agencies, State and local governments, and the private sector. These include; the REMR Notebook, a collection of Technical Notes on proven materials, methods, and equipment for repair, evaluation, and rehabilitation; the REMR Bulletin, an information bulletin relating field experience in maintenance and repair from around the Corps; a series of technical reports of results of major research findings; and a series of videotapes showing how to use the latest REMR technology.

NATIONAL EMERGENCY PREPAREDNESS PROGRAM

The Corps FY 1987 National Emergency Preparedness Program was formulated to continue the implementation of a comprehensive effort to develop and maintain a capability to respond decisively and effectively to any national emergency. The FY 1987 budget request of $13,500,000, an increase of $3,600,000 from the previous year, generally reflects a maintenance program of existing activities and a modest growth of the Emergency Water Planning Mission and the macro-analysis program. Specifically, the funds will be used to maintain national emergency preparedness plans, to train personnel to meet the responsibilities of a national emergency, and to supply and maintain emergency facilities. Some scheduled activities include: planned expansion

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of the Emergency Water Planning Program through the involvement of additional Corps Districts; upgrading and conversion of existing facilities to emergency relocation sites to increase the survivability of the Corps command and control structure; upgrading of existing substandard emergency operations centers; and expansion of the Corps macro-analysis program to analyze, on a regional basis, the Corps requirements and capabilities during a mobilization and other National Emergencies.

ACTIVITIES UNDER THE FLOOD CONTROL AND COASTAL EMERGENCIES APPROPRIATION

The budget request of $25,000,000 for Flood Control and Coastal Emergencies, under Public Law 84-99, is the same as the FY 1986 allocation. This is to meet emergency operations requirements for a minimum response year, equivalent to about 50 percent of the average annual requirements for these activities, excluding $277 million in expenditures in recent years for Mount St. Helens emergency work. It also provides funds to accomplish advance planning and preparedness activities, including: review and updating of response plans; training personnel to insure their capability to respond under adverse conditions; procurement and pre-positioning of equipment and supplies not likely to be readily available during the initial stages of response; periodic exercises to test and evaluate plans, personnel, and training; and overall management of the response program to insure a workable and coordinated effort is undertaken and executed in a timely and effective manner.

ACTIVITIES UNDER THE GENERAL EXPENSES APPROPRIATION

The FY 1987 budget request for General Expenses is $115,000,000, an increase of $8,000,000 over FY 1986. If the $3,000,000 proposed FY 1986 Transfer Budget Request is approved, the increase over FY 1986 would be $5,000,000. This $3,000,000 would restore the General Expenses portion of the five percent overall pay cut which was proposed in the original FY 1986

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Budget and then withdrawn in a subsequent Budget Amendment; but by that time, the Congressional action on the Energy and Water Development Appropriation Bill had proceeded to the point where it was too late to adjust the Corps FY 1986 Budget and Appropriation.

The General Expenses appropriation provides for the executive direction and management of the overall Civil Works program through the Office of the Chief of Engineers and the 11 Division Offices. It also funds the Board of Engineers for Rivers and Harbors (BERH), the Coastal Engineering Research Board (CERB), a portion of the Engineer Automation Support Activity (EASA), and a portion of the Water Resources Support Center (WRSC). The increase is based on: estimates of executive direction and management requirements, including civilian and military personnel compensation and benefits; increased Standard Level User Charges for rental expenses; and inflation allowance on communications and utilities costs, and on other non-labor costs such as automated data processing, office automation, equipment maintenance, supplies, and training. Travel costs will be funded at about the current level. Non-labor estimates include deferred FY 1986 requirements in fixed major investments, such as computer hardware at EASA and Division Office plant and equipment, as well as discretionary cost items such as computer and administrative support, maintenance, and supplies. The deferred requirements stem from funding shortfalls caused by an $11,000,000 reduction in the FY 1986 budget request and a further reduction of $4,601,000 associated with the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177). Reductions also impacted staffing costs, which comprise about 75 percent of the General Expenses account. Executive recruitment actions have been curtailed to provide additional savings. Funding in this account has reached a point beyond which additional shortfalls would have severe impacts on effective executive management and efficient execution of the Civil Works

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program.

REVOLVING FUND--PLANT REPLACEMENT AND IMPROVEMENT PROGRAM

Our FY 1987 Plant Replacement and Improvement Program (PRIP) expenditures under the Revolving Fund, for items designed to increase productivity, reduce costs, compensate for reductions in manpower, modernize and improve our equipment and operational capabilities, and increase safety, are estimated at $83,000,000. This includes $12,000,000 in requested new budget authority: $10,000,000 of this amount is for construction of a dustpan dredge replacement; and $2,000,000 is for Automatic Data Processing Equipment and software conversion, for the Corps of Engineers Automation Plan (CEAP). Appropriations were provided for both of these items last year, and both require such sizeable expenditures over a short time period that they cannot be financed from Revolving Fund resources without seriously impacting our regular program.

The remaining $71,000,000 of PRIP expenditures will be financed from the funds generated by the Revolving Fund rental charges for use of our plant and equipment. $1,315,000 has been programmed for four major new items: $200,000 for design of a crane barge replacement for the Mobile District; $125,000 to complete design and initiate construction of a tender replacement for the Vicksburg District; $940,000 to complete design and construction of an erosion protection system at the Savannah District Engineer Depot; and $50,000 to complete design and initiate construction of additions and betterments to the Coastal Engineering Research Center facilities at the Waterways Experiment Station. $50,765,000 has been programmed for the acquisition of major items of plant and equipment not requiring new budget authority and that were previously justified to the Committee in prior years: $400,000 to complete construction of a warehouse replacement in the Omaha District; $1,200,000 to continue renovation of the Alaska District office building; $650,000 to complete construction of the Riprap Test Facility

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at the Waterways Experiment Station; $1,250,000 to initiate construction of an Automatic Data Processing Center at the Waterways Experiment Station; $2,215,000 to complete construction of the Hydraulics Laboratory Building Addition and $600,000 for model shelter structures, at the Waterways Experiment Station; $7,000,000 to initiate construction of the Walla Walla District office building; $350,000 for design of a minimum fleet sidecaster dredge replacement for the Wilmington District; $800,000 for procurement of three high-speed survey boat replacements for the Norfolk, Savannah, and Jacksonville Districts; $1,100,000 to complete design and initiate construction of a towboat replacement for the Rock Island District; $1,000,000 to initiate construction of a derrickboat replacement for the Huntington District; $1,200,000 to continue upgrading of Water Control Data Systems; $11,000,000 to continue installation of Computer-Aided Design and Drafting Equipment (CADD); $6,000,000 to continue upgrading of the Corp-wide radio communications system; and $16,000,000 for microcomputers, graphics display terminals, and other general-purpose office automation equipment. $18,920,000 has also been programmed for design, rehabilitation, construction, acquisition, additions, and betterments of miscellaneous minor items of plant and equipment with a total cost of less than $700,000 each.

TRANSFER BUDGET REQUEST FOR FY 1986

For FY 1986, an additional $3,000,000 in the General Expenses (GE) appropriation is required to restore a portion of the overall five percent pay cut proposed in the orginal FY 1986 Budget. The Corps of Engineers did not have the pay cut reduction restored in the Energy and Water Development Appropriation Act, 1986, as proposed by the President in a FY 1986 Budget Amendment, because of the timing of Congressional action on the bill. The total reduction in the Corps Civil Works program was $30,000,000, which the Department of the Army proposes to absorb with some difficulty, except that

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some relief is necessary in the GE appropriation. Therefore, a transfer of $3,000,000 is requested under the GE appropriation, to be derived from the Operation and Maintenance, General, appropriation. The reduction in GE cannot be absorbed without severe impact on manpower staffing of the executive direction and management function and on the efficient execution of the entire Civil Works program. In addition to the pay cut, GE was frozen at the FY 1985 budget authority, reduced by ten percent of administrative expenses, and further cut $4,601,000 by the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177). The effect is a reduction from the budget request of $118,000,000 to $102,400,000, which is $12,600,000 less than FY 1985. Accordingly, to mitigate the severe impact, it is critical that the $3,000,000 be restored to GE for FY 1986.

CONCLUSION

Mr. Chairman, this concludes my summary remarks. Dr. Roper, our Assistant Director of Research and Development (Civil Works), will now make a brief slide presentation on our R&D activities, highlighting a few of the accomplishments and contributions toward executing our Civil Works program with greater effectiveness, safety, and economy.

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RESEARCH AND DEVELOPMENT HIGHLIGHTS

Dr. ROPER. If someone can turn on the projector and get the room lights, then I will proceed.

Good morning, Mr. Chairman and distinguished committee members. Today I will discuss our R and D programs, proposed funding levels, some selected accomplishments, as well as ongoing work.

CIVIL WORKS R&D FUNDING

Shown here is our FY 1986 and proposed FY 1987 funding level. We will also perform a comparable level of closely related mission support work for our Corps Districts and Divisions and other Federal agencies. I will now present some of our accomplishments in direct-funded and reimbursable work at our four Corps of Engineers laboratories.

DAM SAFETY

In the Materials Area, a top priority in our research efforts centers around dam safety, including assessment of potential liquefaction of soils during earthquakes, and the evaluation of economical and reliable in-situ testing technology. Our research results are being applied at Sardis Dam in Mississippi, shown here, and at Folsom Dam in California, Ririe Dam in Idaho, and Hillsdale Dam in Kansas.

MICROCOMPUTER APPLICATIONS FOR COASTAL ENGINEERING

In the Coastal Engineering Area, field application of our Microcomputer Applications for Coastal Engineering or MACE, Program has reduced engineer computational time, resulting in more efficient and effective use of personnel.

COASTAL OCEAN DYNAMICS APPLICATIONS RADAR

Our new shore-based Coastal Ocean Dynamics Applications Radar—or CODAR for short—measures waves and currents out to a distance of 30 kilometers. Tests have been conducted at Delaware Bay, shown here, and at our research facility in North Carolina, and further tests are planned for Southern California later this year. In addition to active hurricane support to the Corps, our R and D group at Duck, North Carolina got a unique opportunity this past year to gather storm processes data when the eye of Hurricane Gloria passed over our research pier.

SHIP SIMULATOR FOR SAVANNAH HARBOR DESIGN

In the Flood Control and Navigation Area, we are presently performing research with our ship simulator for Savannah Harbor to optimize navigation channel design. We are also doing model testing of the lock and dam at Bonneville for the North Pacific Division to make certain that the most functionally-efficient and maintainable waterways possible are built.

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SOLID MOISTURE SENSOR

Our Cold Regions Research and Engineering Laboratory has improved its solid moisture sensor, shown here, to provide remote accurate data entry, allowing for better runoff prediction and water management at Corps reservoirs. The sensors were also used in a recent military exercise in Europe, and credited with avoiding $8 million in maneuver damages.

FIELD VERIFICATION PROGRAM ON DREDGED MATERIAL MANAGEMENT

In the Environmental Quality Area, our successful joint EPA/Corps Field Verification Program is finishing this year. Under this program we have established environmentally sensitive dredge material management guides that are now being adopted throughout the Corps, as well as for applicable EPA Superfund cleanup sites.

AQUACULTURE DEMONSTRATION IN DREDGED MATERIAL CONTAINMENT AREAS

In beneficial use of dredged material, a new demonstration program was just initiated which uses dredged material containment areas for aquaculture. The purpose is to show landowners, investors, and the Corps that aquaculture can be profitably conducted in a dredged material containment area. This program should help the Corps obtain new, more economical disposal sites near dredging operations.

COMPUTER APPLICATIONS FOR OPTIMAL DESIGN

In the Water Resources Planning Area, we have developed a new computer program to optimally size piping and rehabilitation projects. This is the first time this type of technology has grown past the research stage and become a useful tool for practicing engineers.

SATELLITE GLOBAL POSITIONING SYSTEM FOR PRECISE SURVEYING

In the Surveying and Satellite Applications Area, scientists from our Engineering Topographic Lab used the Satellite Global Positioning System for economical, precise surveys of eight lock and dam structures located along a 50-mile stretch of the Allegheny River for the Pittsburgh District. This job was completed in one-fourth the time and at half the cost of conventional survey techniques.

COMPUTERIZED DECISION-MAKING FOR AQUATIC PLANT CONTROL

In the Construction, Operations, and Maintenance Area, the Aquatic Plant Control Research Program is assisting in problem aquatic plant management for the over 1.6 million acres of the Nation's waterways and lakes that are infested with plants such as the California water hyacinths shown here. Available aquatic plant management technology is being adapted for use on desk-top microcomputers. One example is shown here. It is a decision-making tool for determining stocking rates of aquatic weed-eating fish.

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PLASTIC PIPELINE FOR DREDGING OPERATIONS

The use of lightweight, flexible, abrasion-resistant high-density polyethylene pipe for dredging, as shown here on the left, is being investigated and may lead to reduced costs and enhanced portability for pipeline dredging operations.

UNDERWATER PLACEMENT OF CONCRETE

Under our Repair, Evaluation, Maintenance, and Rehabilitation Program, which General Hatch mentioned earlier, we are looking at a new type of tremie concrete which may reduce repair costs and time by not requiring costly dewatering. This will allow underwater placement of material by divers, and also does not cause large clouds of suspended particles. This, incidentally, was first developed in Japan.

TECHNOLOGY TRANSFER AND ASSISTANCE TO OTHERS

Technology transfer continues to be emphasized. Some of our FY 1985 accomplishments are shown in this slide. Our Civil Works R and D expertise is also being applied to problems of other agencies. For example, we are doing approximately $3 million worth of work for EPA under the Superfund program. We are also providing assistance to the Maryland Department of Natural Resources by developing a numerical hydrodynamic model of the Upper Chesapeake Bay. We are also using advanced numerical models to determine the effects of the proposed Trident navigation channels on currents and sediment transport at the ocean entrance to the submarine base at Kings Bay, Georgia. And, finally, our personnel from the Cold Regions Lab assisted in recovery operations following the Gander crash by applying new techniques for snow removal.

CIVIL WORKS R&D BENEFITS THE CORPS AND THE NATION

In conclusion, the Civil Works R and D program is designed to exploit the best available technology and apply it to the needs of the Nation and the Corps' Civil Works Program. It has a consistent record of high return on investment through technology, innovation, and application to reduce costs, improve efficiency, and save time.

I have given you a thumbnail sketch of our program of over 1,000 individual projects at our labs. It is a productive program and, as you can see, it significantly supports the Corps and the Nation.

Thank you very much.

Mr. BEVILL. Thank you. We will insert the justification material for the Fiscal Year 1987 Remaining Items in the record at this point, without objection.

[The justifications follow:]

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Justification of Estimates for Civil Functions Activities
Department of the Army, Corps of Engineers
Fiscal Year 1987

SUMMARY OF REMAINING ITEMS

GENERAL INVESTIGATIONS

	FY 1986 Allocation $	FY 1987 Request $	Increase or Decrease $
1. Surveys			
d. Review of Authorized Projects			
(3) Review for Deauthorization	170,000	200,000	+ 30,000
e. Cooperation with Other Federal Agencies, States, Non-Federal Interests, and Foreign Governments	5,770,000	6,750,000	+ 980,000
Subtotal	5,940,000	6,950,000	+1,010,000
2. Collection and Study of Basic Data			
a. Flood Plain Management Services	7,800,000	8,800,000	+1,000,000
b. Other Programs			
(1) Stream Gaging (U.S. Geological Survey)	500,000	535,000	+ 35,000
(2) Precipitation Studies (National Weather Service)	300,000	380,000	+ 80,000

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APPROPRIATION TITLE: General Investigations (Cont'd)

	FY 1986 Allocation $	FY 1987 Request $	Increase or Decrease $
2. Collection and Study of Basic Data (Cont'd)			
b. Other Programs (Cont'd)			
(3) International Waters Studies	100,000	100,000	0
(4) Hydrologic Studies	235,000	260,000	+ 25,000
(5) Scientific and Technical Information Centers	120,000	130,000	+ 10,000
(6) Coastal Field Data Collection	1,800,000	1,800,000	0
(7) Transportation Systems	500,000	600,000	+ 100,000
(8) Environmental Data Studies	200,000	235,000	+ 35,000
Subtotal	11,555,000	12,840,000	+1,285,000
3. Research and Development			
(1) Materials	2,390,000	2,940,000	+ 550,000
(2) Coastal Engineering	5,380,000	6,130,000	+ 750,000
(3) Flood Control and Navigation	2,640,000	3,130,000	+ 490,000
(4) Environmental Quality	2,520,000	2,700,000	+ 180,000
(5) Water Resources Planning Studies	2,410,000	2,600,000	+ 190,000
(6) Surveying and Satellite Applications	1,110,000	1,400,000	+ 290,000
(7) Construction, Operations, and Maintenance	3,550,000	4,100,000	+ 550,000
Subtotal	20,000,000	23,000,000	+3,000,000
Total	37,495,000 1/	42,790,000	+5,295,000

1/ Does not reflect reductions required by the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177).

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APPROPRIATION TITLE: General Investigations, FY 1987

1. Surveys

d. Review of Authorized Projects

(3) Review for Deauthorization

FY 1986 Allocation	$170,000	FY 1987 Request	$200,000

GENERAL: Section 12 of the Water Resources Development Act of 1974, Public Law 93-251, directs the Secretary of the Army, acting through the Chief of Engineers, to review unconstructed Corps of Engineers projects to determine if they should remain authorized. The law further requires the Secretary of the Army to transmit an annual report to Congress with a list of those projects recommended for deauthorization. Projects may be reviewed for possible deauthorization only if they have been authorized for at least eight years and have had no appropriations in the last eight years. Since the enactment of Section 12, the Secretary of the Army has transmitted to Congress ten annual reports. To date 476 projects have been deauthorized based on recommendations in the 10 annual reports submitted to Congress.

BUDGET REQUEST: Funds in the amount of $200,000 are requested for Fiscal Year 1987 to start and complete 40 more reviews.

APPROPRIATION TITLE: General Investigations, FY 1987

1. Surveys

e. Cooperation with Other Federal Agencies, States, Non-Federal Interests, and Foreign Governments

FY 1986 Allocation $5,770,000 FY 1987 Request $6,750,000

The amount of $6,750,000 is requested for Corps of Engineers activities required for cooperation with other agencies, invclved in water resources activities which are primarily the responsibility of those interests. This group of activities has in the past been titled "Coordination Studies with Other Agencies, States and non-Federal Interests" but this year because of the addition of a new activity, Cooperative Efforts in Foreign Development, the title has been changed to "Cooperation with Other Federal Agencies, States, Non-Federal Interests, and Foreign Governments." The activities are as follows:

(1) The amount of $200,000 is requested to continue field cooperation with the Department of Agriculture (USDA) under the Watershed Protection and Flood Prevention Act of 1954 (Section 5 of PL 566-83), as amended; the Flood Control Act of December 22, 1944 (Section 1 of PL 534-78), as amended; and the National Environmental Policy Act of 1969 (PL 91-190). Executive Order No. 10913, dated 18 January 1961, requires that cognizance be taken of constructed and contemplated upstream and downstream USDA works, and that plans be submitted to the Secretary of the Army for review and comment prior to their transmission to the Congress through the President. As the agency responsible for the flood control features of basin program, the Corps of Engineers must provide the Department of Agriculture with information on proposed Corps projects, including their effect on contemplated watershed programs. The Corps is also required by Section 102 (2)(c) of the National Environmental Policy Act of 1969 to review the environmental impacts which would result from installation of USDA project features.

(2) The amount of $200,000 is requested to continue cooperation with the Bureau of Reclamation of the Department of the Interior in preparation of estimates of flood control requirements, and benefits, and reservoir operating criteria for storage reservoirs to be constructed with Federal funds, in accordance with Sections 1 and 7 of PL 534-78 and Section 7 of PL 984-84, as amended. Studies made by the Bureau of Reclamation of the flood control features of proposed reclamation projects are submitted to the Corps of Engineers for review and determination of the flood control benefits. The Corps of Engineers utilizes the data collected by the Bureau but makes an independent evaluation of the project. The report of the Chief of Engineers is used by the Secretary of the Interior in making allocation of project cost to flood control.

(3) The amount of $200,000 is requested for cooperation with Federal and state agencies in authorized, but unfunded investigations for cooperation with: River Basin Compact Commissions; Interstate River Basin Compacts; and Regional Planning Commissions. These require Corps representation for cooperation with interagency basin committees and river basin commissions.

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APPROPRIATION TITLE: General Investigations, FY 1987

1. Surveys

e. Cooperation with Other Federal Agencies, States, Non-Federal Interests, and Foreign Governments (Continued)

(4) The amount of $3,000,000 is requested for field coordination and assistance to States and for cooperation with any State as specified in Section 22 of PL 93-251 in preparation of comprehensive plans for development, utilization, and conservation of the water and related resources of drainage basins located within the boundaries of such State; and to submit to Congress reports and recommendations with respect to appropriate Federal participation in carrying out such plans.

(5) The amount of $2,900,000 is requested for special investigations; this item provides for: (1) special investigations and reports of nominal scope prepared pursuant to Congressional and other requests from outside the Corps of Engineers for information relative to projects or activities which have no funds; (2) similar work of detailed scope, as specifically authorized by the Chief of Engineers; (3) review of preliminary permit and licenses applications for non-Federal hydroelectric power development either at or affecting Corps water resource projects; and (4) review of reports and environmental impact statements of other agencies. Among the investigations paid for from these funds are reconnaissance investigations of flooding potential and flood damages, bank erosion, drainage, harbor improvements, anchorages, and development of navigation channels.

(6) The amount of $250,000 is requested for expenses associated with, and which will be incurred as a result of, certain cooperative efforts with foreign governments, specifically, mutually beneficial scientific and technological cooperative efforts. Over the course of many years, the Corps of Engineers has provided technical assistance and advice in the water resources field to governments of developing nations, generally on a reimbursable basis, through various U. S. programs and agencies, such as the U. S. Trade and Development Program and the U. S. Agency for International Development. On occasion, the Corps also has been requested to collaborate with government agencies of nations having more mature economies to engage in mutually beneficial research activities and to exchange useful scientific and technological information and expertise. The various types of mutually beneficial cooperation can take such forms as: exchange of technical publications, handbooks, and manuals; seminars and workshops in the U. S.; joint training programs; exchanges of specialists and experts; and research and development activities. These cooperative scientific and technological activities directly benefit U. S. domestic civil works programs while assisting foreign governments in their water resources development. Since each country that participates in these bilateral exchanges obtains benefits, each side is expected to pay the expenses incurred by its participation in these activities; the budgeted amount of $250,000 is associated with such expenses. In addition to the expertise and information gained as a result of these cooperative scientific and technological programs, these activities may in the future also lead to reimbursable technical assistance projects that will provide opportunities for U. S. businesses.

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APPROPRIATION TITLE: General Investigations, FY 1987

2. Collection and Study of Basic Data

a. Flood Plain Management Services

SCOPE: This Corps of Engineers program stems from Section 206 of the 1960 Flood Control Act (PL 86-645), as amended, which authorizes the Secretary of the Army to compile and disseminate data on floods and flood damage potential and to provide guidance in their use in flood-related planning to Federal, State and local agencies. This information and guidance supports planning and implementing actions which reduce the flood hazard through wise use of flood plains. Flood Plain Management Services Program activities include responding to Federal and non-Federal requests for flood hazard information, interpretation, and guidance for sites or short reaches of stream or coast and for follow-up technical and planning assistance to communities having basic flood plain information; participating with the Federal Emergency Management Agency and local governments in the conduct of pre-disaster hurricane evacuation and preparedness studies for mobilizing local community responsiveness to natural disasters in high-hazard coastal areas; and the dissemination of guides and pamphlets to convey the nature of flood hazards and to foster public understanding of the options for dealing with flood hazards.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 1987-91) Program Cost	$47,300,000
Request for FY 1987	8,800,000
Balance to Complete Five-Year Program after FY 1987	38,500,000
Allocation For FY 1986	7,800,000
Increase of FY 1987 over FY 1986	1,000,000
Average Annual Allocation for FY 1982-86	6,760,000

JUSTIFICATION: This amount is critically needed to meet the growing number of high priority demands from Federal Agencies and from State and local governments for flood-related information and planning assistance and to increase the quality of responses, particularly the planning assistance.

ACCOMPLISHMENTS Responses to requests from Federal and non-Federal agencies, communities, firms and individuals for flood-related information, interpretation, and guidance numbered 62,000 during 1985 and related to properties valued at over ten billion dollars. Of the total responses, 40,000 were for technical data and interpretations and 22,000 were for planning guidance to 14,000 Federal, 16,000 public, and 32,000 private recipients. The Corps participated in pre-disaster hurricane evacuation and preparedness studies for high-hazard areas in the Florida panhandle, Alabama, Mississippi, Georgia, South Carolina, North Carolina, Virginia, Maryland, Delaware, New Jersey and Hawaii; and Puerto Rico; provided support for updating and improving mathematical models of flood plain hydrology and hydraulics; developed training programs in flood plain hydrology and hydraulics; and prepared flood-proofing studies.

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APPROPRIATION TITLE: General Investigations

2. Collection and Study of Basic Data

b. Other Programs
(1) Stream Gaging (U.S. Geological Survey)

SCOPE: The Corps of Engineers cooperates with the U.S. Geological Survey in this effort, and contributes funds for all or a part of the cost of the operation and maintenance of about 2,400 stations which are of special importance to the Corps mission. This cooperative effort is a continuing program which was established in March 1928, so that streamflow data would be available to meet special needs in connection with the Corps water resources responsibilities.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 1987-1991) Program Cost	$ 2,745,000
Appropriation Requested for FY 1987	535,000
Balance to Complete Five-Year Program after FY 1987	2,210,000
Allocation for FY 1986	500,000
Increase of FY 1987 over FY 1986	35,000
Average Annual Allocation for FY 1982-1986	497,000

JUSTIFICATION: The Corps of Engineers makes extensive use of streamflow records in the planning, design, construction, and operation of water resources projects. The basic network of stream gaging stations operated by the Geological Survey under its normal functions is inadequate to meet all the special needs in connection with the Corps water resources development responsibilities. Accordingly, a cooperative program was established under which funds are transferred to the Survey to cover partially the cost of operating specific stations. In the optimum development of water resources, it is essential that continuous records of streamflow be maintained at specific sites over a long period of years, in order to provide a reliable measure of water resources available for various uses. This budget item covers only the non-project portion of the cooperative program. To continue the operation of stations of special interest to the Corps, an estimated total of $12,238,100 will be required by the Geological Survey during FY 1987, exclusive of funds received from other cooperative sources. This gross cost will be financed from three sources, as follows: (1) $703,100 appropriated directly to the Survey for use in operating stations required by the Corps; (2) $535,000 under this budget item for transfer to the Survey; and (3) $11,000,000 from the Corps funds budgeted elsewhere for authorized projects and studies. The basic program will remain at essentially the same level as in previous years.

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ACCOMPLISHMENTS: Records of the streamflow stations supported by transfer of funds, are published in a regular series of reports by the Geological Survey and provide valuable information for use by the Corps as well as other Federal agencies and the general public.

FISCAL YEAR 1987: The budget request for $535,000 in FY 1987 is higher than in FY 1986. This increase will be needed to replace stream gages destroyed by severe flood events.

COORDINATION: This program is fully coordinated with the U.S. Geological Survey. Costs for conducting the work are compiled by representatives of the Survey and form the basis for the transfer of funds to that agency.

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APPROPRIATION TITLE: General Investigations

2. Collection and Study of Basic Data

b. Other Programs
(2) Precipitation Studies (National Weather Service)

SCOPE: This item pertains to the Hydrometeorological Studies Program conducted by the National Weather Service for the Corps of Engineers. These studies are conducted by a technical service organization in the National Weather Service that prepares meteorological studies for use by the Corps in planning and designing various types of water resources projects. The Corps annually transfers funds in support of this work.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 1987-1991) Program Cost	$ 1,960,000
Appropriation Requested for FY 1987	380,000
Balance to Complete Five-Year Program after FY 1987	1,580,000
Allocation for FY 1986	300,000
Increase of FY 1987 over FY 1986	80,000
Average Annual Allocation for FY 1982-1986	297,000

JUSTIFICATION: The scientific services provided by the National Weather Service under this program consist of review of the meteorological aspects of storms completed under the Storm Study Program conducted by the Corps, development of probable maximum precipitation estimates for regional and for specific river basins for use in engineering studies, development of meteorological parameters pertaining to hurricanes and other wind and tide phenomena, and other studies necessary to accomplish the Corps' mission. Funds in the amount of $380,000 will be required in FY 1987 to continue the program at a level consistent with Corps needs. The entire cost of the hydrometeorological studies program is funded under this budget item.

ACCOMPLISHMENTS: During FY 1985, the Hydrometeorological Branch (HMB) of the National Weather Service completed the report on Antecedent Storms for Small Drainage Basins in Texas. Report will be published early in FY 1986. The standard project storm study for the Clearwater River Basin above Dworshak Dam, Texas is nearing completion, with publication scheduled for the middle of FY 1986. Also, the HMB published the report, Probable Maximum Precipitation Estimates for Johns Creek above Dewey Dam, Kentucky, in FY 1985. Work continued on the updated report for probable maximum precipitation estimates for the Northwest States. Many candidate storms have been investigated using the recently developed computer program. Some minor generalized study techniques have been developed to facilitate this major study effort. In FY 1985, work was initiated and completed on a site-specific study for probable maximum precipitation estimates

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for the White River Basin above Mud Mountain Dam, Washington. Another site-specific probable maximum precipitation study was started by the HMB on the Cumberland River above Wolf Creek Dam, Kentucky late in FY 1985. Work was initiated on the review of hydrometeorological aspects of the Storm Study of December 2-6, 1982 near St. Louis, Missouri.

FISCAL YEAR 1987: The major study effort in FY 1987 will be the continuation of the updated report HMR No. 43, Probable Maximum Precipitation, Northwest States. A initial draft report is tentatively scheduled for late FY 1987. An Application Manual, giving areal and temporal distribution of basin-wide PMP estimates for the Pacific Northwest, will be investigated independently and concurrently. Two other major studies are scheduled to begin in FY 1986, with significant accomplishments anticipated during FY 1987. The first effort concerns an Application Manual for the area between the Continental Divide and the 103rd Meridian. The second major new study involves a study of antecedent storms in the mid-western United States.

COORDINATION: This program is fully coordinated with the National Weather Service.

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APPROPRIATION TITLE: General Investigations, FY 1987

2. Collection and Study of Basic Data

(b) Other Programs (Continued)

(3) International Waters Studies

SCOPE: These funds are required for Corps of Engineers field personnel assigned engineering study responsibility to assist the United States Government in meeting obligations and commitments required under provision of treaties and other international agreements between the Governments of the United States and Canada. Such participation by the Corps and other agencies is essential in maintaining full coordination by all interests concerned in the regulation, control, and utilization of the boundary waters.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 1987-91) Program Cost	$500,000
Request for FY 1987	100,000
Balance to Complete Five-Year Program after FY 1987	400,000
Allocation for FY 1986	100,000
Increase of FY 1987 over FY 1986	0
Average Annual allocations for FY 1982-86	97,000

JUSTIFICATION: The $100,000 requested in FY 1987 for International Waters Studies, an assignment-type program from the establishing parties, is essential to assure better control, utilization, and the orderly development of the jointly-controlled water resources along the Canadian-United States boundary, in accordance with the provisions of the Boundary Waters Treaty of 1909, the Niagara River Treaty of 1950, the Columbia River Treaty of 1961, and other less formal agreements between the two Governments. Such engineering studies are closely related to the Corps of Engineers' Civil Works program and are summarized in the Chief of Engineers Annual Report. Also, these studies are of importance in attempting to meet water demands resulting from an expanding economy along the United States-Canadian border.

APPROPRIATION TITLE: General Investigations, FY 1987

2. Collection and Study of Basic Data

b. Other Programs (Continued)

(3) International Waters Studies (Continued)

ACCOMPLISHMENTS: Under the Boundary Waters Treaty of 1909, the International Joint Commission (IJC) was established and is empowered to establish local boards to conduct investigations and to assure adherence to orders of approval pertaining to the utilization of boundary waters, as promulgated by the Commission. Since 1914, representatives of the Corps of Engineers have served on IJC Boards. Representatives of other Federal and state agencies having jurisdiction or interests in water and related land resource development along the international boundary also have membership in the U. S. Section of these Boards and Committees. Currently, Corps representatives are serving on the following IJC Boards: St. Croix River, Champlain-Richelieu, Lake Champlain, St. Lawrence River, Niagara, Lake Superior, Great Lakes Diversion and Consumptive Uses, Lake of the Woods, Rainy Lake, Souris-Red Rivers Engineering, Kootenay Lake, Osoyoos Lake, Skagit River and the Great Lakes Technical Information Network. Under the Columbia River Treaty of 1961, representatives of the Corps serve on the Columbia River Treaty Permanent Engineering Board and the Columbia River Treaty Entities. These members report directly to the governments on the operation of the four Treaty reservoir projects (Mica, Duncan, Hugh Keenleyside and Libby). The Columbia River Treaty Entities are responsible for formulating and executing the operating arrangements necessary to implement and comply with the Treaty. Under the Niagara River Treaty of 1950, a representative of the Corps serves on the International Niagara Committee. This Committee, likewise reports to the Governments, providing monthly data on flows over Niagara Falls and of diversion from the Niagara River and Welland Canal. The Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data is an international group established in 1953. It is composed of representatives of agencies in both countries concerned with the subject of levels and flows in the Great Lakes system and related research. They coordinate such efforts to assure uniformity in the development of basic data and to facilitate exchange of information. A Corps representative also represents the U.S. Government on the International Lake Memphremagog Board.

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APPROPRIATION TITLE: General Investigations, FY 1987

2. Collection and Study of Basic Data

b. Other Programs (Continued)

(3) International Waters Studies (Continued)

These various Boards and Committees are responsible for holding joint meetings, reviewing report drafts, correspondence, making field inspections, obtaining, collecting, and analyzing hydrologic and hydraulic data, and reporting of their findings usually resulting in a final printed report from the U. S. and Canadian participants to the establishing parties. The degree of study activity varies from routine to very active depending upon the requirements of the Commission or Treaty under which they were established.

FISCAL YEAR 1987: For FY 1987, the following international activities have been estimated to require study funds under this item; St. Lawrence River Board of Control, Lake Superior Board of Control, Coordinating Committee on Great Lakes Basic Hydrologic and Hydraulic Data, Niagara Board of Control, Souris-Red Rivers Engineering Board, Columbia River Treaty Entities, Columbia River Permanent Engineering Board, Osoyoos Lake Board of Control, Skagit River Board of Control, and the Kootenay Lake Board of Control.

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APPROPRIATION TITLE: General Investigations

2. Collection and Study of Basic Data

b. Other Programs
(4) Hydrologic Studies

SCOPE: The scope of activities under this item is determined annually from the proposals by field offices to meet high-priority needs. Included is the collection and study of basic hydrologic data which provide information for future use in the design, construction, and operation of water control structures. The program consists of four sub-items: Storm Studies, General Hydrologic Studies, Sedimentation Studies, and Streamflow and Rainfall Data.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 1987-1991) Program Cost	$ 1,380,000
Appropriation Requested for FY 1987	260,000
Balance to Complete Five-Year Program after FY 1987	1,120,000
Allocation for FY 1986	235,000
Increase of FY 1987 over FY 1986	25,000
Average Annual Allocation for FY 1982-1986	242,000

JUSTIFICATION:

1. Storm Studies: The Storm Study Program of the Corps is a continuing investigation of major storms for the purpose of accumulating comprehensive rainfall data. These data are required in the evaluation of flood-producing potentialities of river basins, and constitute the major portion of the basic data used in probable maximum precipitation determinations. Funds in the amount of $76,000 will be required in FY 1987 to work on seven storm studies. The Part I storm study of the event centered over Jackson, Mississippi, in April 1979 is scheduled for completion in mid-FY 1986. The Part I study of the storm that occurred near Alvin, Texas, in July 1979 is under investigation, with significant progress anticipated during the year and completion scheduled for FY 1986. Similarly, substantial progress is expected on the Part II study of the storm located in the vicinity of Medina, Texas, in August 1978. The Part II Rapid City, South Dakota, June 1972 storm study will be finished in mid-FY 1986. Likewise, the Part II studies of the September 1977 storm on Brush Creek, Missouri-Kansas, and the September 1972 storm on the Nishnabotna River in Iowa will be completed in FY 1987. The Part II study of the storm that occurred in the vicinity of St. Louis, Missouri, on 2-6 December 1982 will be initiated in FY 1986.

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2. General Hydrologic Studies: Studies under this sub-item include needed generalized hydrologic analyses of rainfall-runoff relationships, flood frequency, snowmelt studies, model calibrations in urban areas, analyses of past floods, and other studies of related hydrologic nature. Funds in the amount of $98,000 in FY 1987 will be required to continue this sub-item at a level to insure proper and orderly progress. The major effort in the program is continuation of the development related to the generalized frequency curve analysis in connection with the Water Resources Council Bulletin entitled "Guidelines for Determining Flood Flow Frequency." A second major effort involved the Federal-State cooperative study on the foothills of Colorado that was initiated in FY 1978. Three Corps Divisions are actively involved in this unique long-term study effort which has State, Federal, and county participation. A new effort began in FY 1985 on re-examination of water yield and potential reallocation of storage space in Corps' reservoirs.

3. Sedimentation Studies: The program is a continuing effort in which funds are used for conducting non-project sedimentation studies, and for the Corps share of an interagency sediment investigation program. The sedimentation studies include: the collection of suspended and bedload characteristics of natural streams; and laboratory studies. The St. Anthony Falls Hydraulic Laboratory at the University of Minnesota is sponsored by the Interagency Sedimentation Committee and constitutes the major work effort under this sub-item. Funds in the amount of $65,000 in FY 1987 will be required to carry on sedimentation studies at the base level.

4. Streamflow and Rainfall Data: This is a continuing program in which funds are used for installation and operation of streamflow and rainfall gages of a non-project nature that are required by the Corps in addition to the stations in the cooperative programs conducted by the Geological Survey and the National Weather Service for the Corps. Additionally, gages are needed to more accurately predict hurricane surges. An amount of $21,000 in FY 1987 is required by field offices to continue the establishment and operation of these special-purpose gages at the base level, and to purchase additional hurricane-surge gages.

ACCOMPLISHMENTS:

1. Storm Studies: The Storm Study Program was organized in 1939 for the purpose of investigating rainfall from major storms of record throughout the entire United States. During FY 1985, Part I of the storm study of September 1977 located on Brush Creek, Missouri-Kansas, was completed in September 1985. Work on the Part II study of the storm that occurred on 1-3 August 1978 near Medina, Texas, continues. Work continued on the study of the Rapid City, South Dakota storm of 9-10 June 1972. The study of the Part I storm of December 1982 near St. Louis, Missouri was completed in FY 1985 and the National Weather Service is reviewing for meteorological consistency.

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2. General Hydrologic Studies: Examples of some of the more important studies accomplished under this program are: determination of rainfall-runoff relationship in urban areas; and snowcover surveys. In addition to the continuation of the above general hydrologic studies, emphasis is given to the development of programs for the adaptation of computer techniques to hydrologic problems. Major accomplishments included aditional progress on a modeling study in urban areas near Omaha, Nebraska, and a pumping station analysis near Rock Island, Illinois. A modeling effort for Brush Creek and Soldier Creek near metropolitan Kansas City was completed and a technical report was published. Some supplemental data collection efforts continue. Work continued on the regional frequency studies for three major river basins in the North Central States. Data collection activities continued on wind speeds and directions in Alaska. The long-term foothill streams of Colorado flash flooding project progressed basically as scheduled. Particularly encouraging to date are the data developed of rainfall-runoff on small watersheds and evaluation of flood potential in connection with design of structures located in the flood basin. Work began on the water yield study.

3. Sedimentation Studies: The majority of funds allotted to this sub-item is used to assist in financing the Corps share of the cooperative Interagency Sedimentation Project at the St. Anthony Falls Hydraulic Laboratory. The small balance of sedimentation funds is allotted for collection of suspended and bedload data.

4. Streamflow and Rainfall Data: Stations funded under this sub-item are generally established and operated several years prior to anticipated authorization for project-type activities, in order to provide a background of observed data on which to base the planning and design of projects. Progress continues on the special gages which are used to obtain hurricane-surge data.

FISCAL YEAR 1987: The appropriation requested for FY 1987 is required to continue the Hydrologic Studies Program at the level required to meet high-priority needs.

	ITEM	FY 1986	FY 1987
1.	Storm Studies	$ 69,000	$ 76,000
2.	General Hydrologic Studies	94,000	98,000
3.	Sedimentation Studies	53,000	65,000
4.	Streamflow and Rainfall Data	19,000	21,000
	TOTAL	235,000	260,000

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COORDINATION: The storm studies are prepared by Corps field offices and are reviewed by the National Weather Service in the preparation of probable maximum precipitation estimates for the Corps. The Interagency Sedimentation Project is conducted cooperatively, and jointly funded, by eight Federal agencies. Information concerning streamflow and rainfall data collection by the Corps under this activity is made available to the U.S. Geological Survey and the National Weather Service.

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APPROPRIATION TITLE: General Investigations

2. Collection and Study of Basic Data

b. Other Programs
(5) Scientific and Technical Information Centers

SCOPE: Four information analysis centers (soil mechanics, concrete technology, coastal engineering, and hydraulic engineering) all located at the US Army Engineer Waterways Experiment Station, operating in specific technical areas closely related to Civil Works activities, are supporting the information needs of Department of Defense (DoD) engineers and scientists. The function of each center is to acquire, examine, evaluate, and disseminate newly published scientific and technical information generated within the U.S. and abroad.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 1987-1991) Program Cost	$690,000
Appropriation Requested for FY 1987	130,000
Balance to Complete Five-Year Program after FY 1987	560,000
Allocation for FY 1986	120,000
Increase of FY 1987 over FY 1986	10,000
Average Annual Allocation for FY 1982-1986	145,000

JUSTIFICATION: The Department of the Army, through Army Regulations 70-45 and 70-22, has established policies with the objectives of eliminating unnecessary duplication of R&D effort and supporting the information needs of scientists and engineers, and has authorized the formation of centers for analysis of scientific and technical information. The specified information centers critically evaluate the technical validity and merits of published and unpublished research, design, construction, and similar technical report publications; and summarize those presenting new, significant, and useful information. The effectiveness of each of the information analysis center activities and services is evaluated annually.

ACCOMPLISHMENTS: At two-month intervals, technical summaries and evaluations of about 10 newly acquired and potentially valuable U.S. and foreign books and reports are distributed within DoD. State-of-the-art surveys, special technical reports, and translations are prepared in response to user requests. Several thousand inquiries (telephone, letters, visits) requiring technical responses are processed annually, and numerous technical evaluations, bibliographies, and reports are prepared. About 80% of the inquiries are generated by Federal and State governmental elements, the balance from private industry and foreign governments.

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Technical Field

Technical Field	Subjects	Primary Service Area
Soil Mechanics	Embankment and foundation engineering, engineering geology	DoD
Concrete Technology	Cements, concrete, aggregates, concrete construction	DoD
Coastal Engineering	Wave action, shore processes, inlet and estuary dynamics, coastal construction	National
Hydraulic Engineering	River, harbor, and tidal hydraulics; flows through pipes and conduits; spillways; hydrodynamics	DoD

FISCAL YEAR 1987

CENTER	FY 1986	FY 1987
Soil Mechanics	$ 30,000	$ 32,500
Concrete Technology	30,000	32,500
Coastal Engineering	30,000	32,500
Hydraulic Engineering	30,000	32,500
	$ 120,000	$ 130,000

COORDINATION: The Scientific and Technical Information Centers (as well as Corps Laboratories, and Division and District Offices) distribute reports, abstracts, and other scientific and technical information to the Defense Technical Information Center (DTIC), the origin library, and the Office of the Chief of Engineers (OCE) library, to insure wide circulation and availability. DTIC publicizes reports through its own DoD data base and forwards the reports to the National Technical Information Service (NTIS, Department of Commerce). NTIS places the reports into a Government-wide retrieval system and makes them available to the public. Further, under a special arrangement with the Water Resources Scientific Information Center (in the U. S. Geological Survey), NTIS distributes monthly compendia of "Selected Water Resources Abstracts" and an annual cumulative edition, with conveniently-indexed and cross-referenced identification of what is being or has been done in water resources research and related scientific and engineering fields, and by whom, where, and when.

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APPROPRIATION TITLE: General Investigations

2. Collection and Study of Basic Data

b. Other Programs
(6) Coastal Field Data Collection

SCOPE: The program is designed to systematically acquire and assemble geophysical information required to accomplish the Corps mission in coastal navigation, storm protection, design, construction, operation, maintenance, and comprehensive regional and local coastal planning. Cost-effective mission accomplishment necessitates long-term data that encompass winds, waves, currents, water level, historic trends in shoreline position, variability in beach profile and bottom configuration, sediment characteristics, and geomorphologic data. These data are either not available in existing archives, are of uncertain or poor quality, or are too sparsely distributed temporally and/or spatially to have statistical viability. The required data are regional in nature and not properly chargeable to authorized projects. Sufficient time is not available prior to or during project preauthorization planning studies to accumulate the years of base-line data necessary for adequate assessment of technical, economic, and environmental feasibility. Acquisition of the information will be accomplished through the synonymous execution of complementary items each of which is unique and contributes certain critically needed data. The program has been reorganized from seven subitems into four subitems: (1) wave information studies; (2) wave gaging; (3) beach and nearshore data; and (4) information management.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 1987-1991) Program Cost	$9,600,000
Allocation Requested for FY 1987	1,800,000
Balance to Complete Five-Year Program after FY 1987	7,800,000
Allocation for FY 1986	1,800,000
Increase of FY 1987 over FY 1986	0
Average Annual Allocation for FY 1982-86	1,648,000

JUSTIFICATION:

1. Wave Information Studies. Numerical simulation techniques are used to estimate wave environments including directionality from weather information. Existing wave gage data are non-directional; hindcast data supplement existing gage data to provide 20-30 year directional wave statistics. This information is paramount to the functional/structural design and economic evaluation of coastal projects. The minimum number of long-term index wave gages are used in the field wave gaging task to establish regional wave climate trends which are used to evaluate, calibrate/verify, and improve wave hindcast models. Using

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meteorological data, the numerical models are subsequently used to expand the wave data base by predicting wave climate estimates over large regions for periods of 20 to 30 years. Additionally, detailed regional wind information is produced. These data are made available to Corps of Engineers Districts (in addition to reports) through an interactive user-friendly system, called Sea-State Engineering Analysis System (SEAS), from which almost any statistical representation desired of the joint probability distribution of waves and water levels can be obtained. Funding required is $600,000.

2. Wave Gaging: High-quality wave data are needed to predict harbor shoaling, harbor oscillation, jetty stabilization, beach erosion, etc. and these data are imperative to operational guidance for dredging, navigation, maintenance, etc. Long-term wave data are acquired from strategically located index stations along the coast of the contiguous United States, Alaska, and Hawaii. Upon acquisition, these data are analyzed and made available to Corps planners, engineers, and managers via computer terminal and in monthly and annual reports. The system of gages will be expanded as strongly encouraged by field offices of the Corps of Engineers. These efforts are coordinated with the National Ocean Survey and the National Weather Service of the National Oceanic and Atmospheric Administration, as well as agencies in the States of California, Alaska, and Florida. These cooperative efforts minimize costs and maximize the data available. Data developed for this program are made available to NOAA and the public. Funds in the amount of $800,000 are required to continue the wave data acquisition for the Atlantic, Pacific, Gulf of Mexico, and Great Lakes coasts.

3. Beach and Nearshore Data. Visual observations of surf conditions and nearshore current patterns are obtained to provide estimates of sand transport rates along beaches and additional wave data for nearshore areas. Research experience with volunteer observers has demonstrated that nearshore wave conditions, including breaker height, breaker period, direction of wave approach and longshore current velocities can be approximated with relatively inexpensive visual measurements. These data are used to estimate longshore sand transport rates and shoreline erosion/accretion reates. Sites are established by Corps Districts (in coordination with State agencies) and data are collected on a volunteer basis. Measurements of long-term, seasonal, and storm-induced beach, dune, and nearshore profile changes are necessary to quantify erosion and accretion rates, and to monitor onshore-offshore movement of beach sand. Correlation of these data with local wave date and nearshore current patterns is required for the evaluation of potential coastal navigation, storm protection, beach restoration, and beach nourishment projects. Historical data on shoreline changes provide the most important source of data required for predicting the effects of coastal works and for establishing the projected economic life of such projects. An historical record of past events provides the best prediction of future occurrences. Data on changes in the distribution of sand across the offshore profile under both normal and storm conditions are required to establish both cyclical variations in the shore profiles and long-term changes. Data collected at coastal sites will be cataloged and archived in a form

easily accessible and utilized by the Districts. Funds in the amount of $300,000 will be needed to collect beach and nearshore data.

4. Information Management. This task objective is to develop a standardized data base so that coastal data formats and analysis procedures are compatible throughout the Corps of Engineers. Maximization of the value of the program data and project-related data, collected by Districts, is accomplished through the use of Corps-wide standards, routine publication of available data (and/or data sources), and utilization of a centralized data library and maintenance of the SEAS system (see item 1 above). Principal forms of output are information reports, data resource reports, and computer-based data files. The information management procedures will help avoid intra-agency duplication, minimize data collection efforts, and identify data deficiencies. Funding required is $100,000.

ACCOMPLISHMENTS: The wave information study has resulted in 20 years of simulated directional wave data for the Atlantic and Pacific coasts, a user-friendly computer-based wave data retrieval and analysis system, and 20 years of wind data for the Atlantic and Pacific coasts. In the area of wave gaging, joint efforts have been established with the States of Alaska, California, and Florida. Index stations to acquire regional wave data have been identified for the contiguous United States, Alaska, and Hawaii. Stations have been established on the Alaska, California Florida, Hawaii, Oregon, and Washington coasts. Wave data have been acquired from most established stations, numerous specific project stations, and for other agencies. An inventory of beach and nearshore profile survey data was completed for four Districts. A large data base acquired from visual surf and nearshore current observations was anaylyzed and disseminated. An information management system was established to handle the simulated wave data, the gaged wave data, the beach and nearshore profile data, and the surf and nearshore current observation data. A meeting with District and Division coastal data users was held to review program efforts and survey their needs. In addition to efforts to broaden wave gage coverage, efforts will be initiated to document storm effects along the coast as a result of the meeting. The latter effort will be made a part of the Beach and Nearshore Data subitem.

Fiscal Year 1987:

Item	FY 1986	FY 1987
1. Wave Information Studies	$675,000	$600,000
2. Wave Gaging	800,000	800,000
3. Beach and Nearshore Data	325,000	300,000
Visual Surf and Nearshore Current Data	(45,000)	
Beach, Dune, and Nearshore Profile Data	(280,000)	
4. Information Management	0	100,000
	$1,800,000	$1,800,000

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APPROPRIATION TITLE: General Investigations, FY 1987

2. Collection and Study of Basic Data

b. Other Programs (Continued)

(7) Transportation Systems

SCOPE: The Transportation Systems Program is required to support Field Operating Agencies (FOAs) in the accomplishment of navigation project benefit/cost analysis. Planning of waterway and harbor navigation projects requires consideration of benefits and costs within the context of not only the water transportation system, but also the total national transportation system. This centrally managed program is a continuing effort that provides analytical techniques and methods, data bases, reports, and services on a Corps-wide basis. The major purpose of the program is to improve the technical quality and accuracy of navigation planning studies, to improve the long-range programming and budgeting for navigation system improvements, to reduce navigation system operating costs and the costs of feasibility studies. The activities of the program include: (1) developing, maintaining and improving transportation analysis methodology and data bases; (2) performing specific nationally focussed studies to provide consistent data for all Corps feasibility reports, and (3) providing consulting assistance to FOA's in the implementation of analytical methods and the use of data files.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 1987-91) Program Cost	$3,000,000
Requested for FY 1987	600,000
Balance to Complete Five-year Program after FY 86	$2,400,000
Allocation for FY 1986	500,000
Increase of FY 1987 over FY 1986	100,000
Average Annual Allocation for FY 1982-86	328,000

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APPROPRIATION TITLE: General Investigations, FY 1987

2. Collection and Study of Basic Data

b. Other Programs (Continued)

(7) Transportation Systems (Continued)

JUSTIFICATION: The $600,000 requested in FY 1987 for Transportation Systems would be used to continue the development of new planning methods, computerized techniques and associated data bases to support FOA project studies. Specifically, $250,000 would be used to develop improvements in the data collection and national reports for the Lock Performance Monitoring System (PMS) to continue field tests of the system models for estimating net benefits from increasing lock capacity, and to continue improvements in navigation systems analysis techniques. The remainder will be used to (1) complete field tests of deep draft analytical procedures which include competitive impacts and repayment analysis and (2) develop capability to report annual defense use of waterways and ports and to report current transportation savings and economic development due to the nation's waterway. The $100,000 increase is required to develop a framework for a national data base on performance of completed navigation projects including information on traffic, savings and cost of operation. The data will be useful to: the Districts doing multiport evaluation, making operating decisions, public and private parties interested in evaluating navigation program output. It will provide the data, currently not aggregated, in a fashion which will enable the Corps to more clearly explain the value of the navigation systems which we plan, construct and maintain.

ACCOMPLISHMENTS: Quarterly reports on performance of locks have been established from the PMS national data base. Improvements in the navigation systems models such as GEM have decreased computer costs and improved turnaround time. A systematic program of field testing of all navigation systems models has begun. Methodology for including competitive impacts and repayment analysis is now undergoing field tests. The tests will include a range of port projects in the east coast, gulf coast and west coast areas and will extend through FY 1987.

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APPROPRIATION TITLE: General Investigations, FY 1987

2. Collection and Study of Basic Data

(b) Other Programs

(8) Environmental Data Studies

SCOPE: These funds are required to produce efficiencies of project cost and program management. They support and encourage the sharing of environmental data and facilitate the locating of other available information. Included in the scope of this program are data collections of a general or regional environmental nature, statistical data summaries of regional or national scope, an information system to interface project-funded environmental activities developed by field units with national or regional environmental needs, and predictive models to structure either programmatic or specific environmental data files to the conceptual needs of engineering and/or planning objectives for economies of cost and time. The environmental data include biological, physical, and cultural components, several of which have requirements for periodic reporting on a national basis, and some of which are responsive to the needs of international treaties and/or obligations. The exchange of data is both intra- and inter-agency.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 1987-1991) Program Cost	$1,175,000
Appropriation Request for FY 1987	235,000
Balance to Complete Five-Year Program after FY 1987	940,000
Allocation for FY 1986	200,000
Increase of FY 1987 over FY 1986	35,000
Average Annual Allocation for FY 1982-1986	200,000

JUSTIFICATION:

1. Models for Programmatic and Specific Data: This program area is designed to develop predictive environmental models of general utility to field offices in given regional areas, or nationally, as appropriate. The models are to be based on existing data for the quantification and prediction of future conditions. Examples of such models include a framework model for the prediction of sites of prehistoric occupation within a river basin, land use projections, and habitat suitability models for wildlife populations.

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APPROPRIATION TITLE: General Investigations, FY 1987

2. Collection and Study of Basic Data

(b) Other Programs

(8) Environmental Data Studies (Continued)

2. Statistical Summaries and Data Files: This program area is designed to provide specific environmental data summaries and displays to meet headquarters' needs for periodic reporting to higher authority and other agencies, responses to Congressional inquiries, and efficient management of the environmental program through the evaluation of collected data for the purpose of identifying trends, problems, and needs.

3. General Environmental Studies: This program area is designed to provide new environmental data which are of general need and utility to the agency but that cannot be efficiently gathered through the funding of specific projects. Additional objectives are to fill regional data gaps and/or time gaps occurring between pre- and post-authorization planning activities, thereby reducing individual study expenditures via the collection of environmental data of broader utility than a single project investigation.

4. Environmental Information Systems: This program area is designed to establish, improve, and monitor the development and trends of environmental data collection within the Corps, and provide for its efficient flow through the agency and to outside users. The systems will provide for the location, classification, and cross-referencing of environmental information packages or files, but will not identify or archive specific bits of data. When operational, the systems will provide for efficient exchange of environmental data serving not only the needs of field and headquarters units but also those needs external to the Corps.

ACCOMPLISHMENTS:

1. Models for Programmatic and Specific Data: The pilot study for the Cultural Resource overview in the Southwestern Division has been completed. This accomplishment is now being extended to all areas of interest to that Division, and with added support from Army installation programs. Additional attention is being given to synthesis of information for standing (historic) structures. All of this involves the integration of information and the evaluation of priorities with seven State Historic Preservation Offices, the Department of the Interior, and the Advisory Council for Historic Preservation. Funds have also been provided to aid in the development and publication of nearly 175 species habitat models which are used to generate data for environmental impact analysis, mitigation planning, and wildlife management planning. Tests of a habitat management evaluation method developed by the Bureau of Reclamation are underway in two districts.

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APPROPRIATION TITLE: General Investigations, FY 1987

2. Collection and Study of Basic Data

(b) Other Programs

(8) Environmental Data Studies (Continued)

2. Statistical Summaries and Data Files: Statistical summaries have been prepared for program and project management needs. Environmental Impact Statement holdings are routinely added to the environmental report files in the Corps' computer-searchable information file. This file is now supported in a Corps computer system. Eight files are maintained for retrieval and query by microcomputers in an executive microcomputer work station developed for the Office of Environmental Oversight, Directorate of Civil Works.

3. General Environmental Studies: Environmental computer software has been developed to assist in data reduction for archeological and historic property records and for biological information on species, their habitats, and life requisites. Conversion of the biological programs to microcomputers is complete, and conversion of archeological data programs is underway.

4. Environmental Information Systems: The generation, flow, and archiving of environmental information (EIS, cultural, biological, physical and aesthetic) within the Corps of Engineers continue to be studied and a FY 85 review of related State level environmental information sources will be updated. An environmental information coordinator (EIC) established as an adjunct of the Environmental Technical Information System at the Construction Engineering Research Laboratory, is shared, and jointly maintained, with the Army Environmental Office.

FISCAL YEAR 1987: The appropriation for FY 1987 is required to continue the Environmental Data Studies Program at a level to meet high-priority needs.

Item	FY 1986	FY 1987
1. Models for Programmatic and Specific Data	$100,000	$100,000
2. Statistical Summaries and Data Files	25,000	40,000
3. General Environmental Studies	25,000	40,000
4. Environmental Information Systems	50,000	55,000
TOTAL	$200,000	$235,000

COORDINATION: Coordination, to preclude undesirable duplication and to mutually reinforce environmental studies programs through exchange of data and other information, is regularly effected with all concerned Federal agencies, notably the Bureau of Reclamation, the Bureau of Land Management, the Fish and Wildlife Service, the Soil Conservation Service, the U.S. Forest Service, the National Marine Fisheries Service, the Environmental Protection Agency, the National Ocean Survey, the National Weather Service, the U.S. Geological Survey, and the Council on Environmental Quality.

APPROPRIATION TITLE: General Investigations

3. Research and Development

The R&D program seeks the solution of problems encountered within the overall Civil Works program which serves the entire array of national, regional, and local needs as related to the beneficial purposes of water and related resources development and management, such as: flood control and damage mitigation by means of dams and reservoirs, levees and floodwalls, channel improvements and diversions, and improved flood plain management procedures and practices; waterborne transportation including harbors, channels, canals, inland, Great Lakes, intracoastal, and coastal waterway improvements for commercial and recreational navigation; hydropower systems, including pumped storage facilities; erosion control and shore protection, including protection and restoration of coastal and Great Lakes shores and beaches, and river channel and bank stabilization; water oriented recreation; municipal, industrial, and agricultural water conservation and supply; pollution abatement and salinity intrusion control; and preservation and enhancement of fish, wildlife, aesthetic, cultural, and other environmental values.

The R&D effort underpins the Civil Works program in improving the Corps of Engineers capability to accomplish its water resources mission and program with optimum effectiveness, economy, and safety, and with serious concern for protection or enhancement of environmental and social values. It is formulated to address priority problems being encountered that are significantly constraining execution of the existing Civil Works workload, or that are envisaged as that mission and the mix of activities change in response to emerging needs. Some of these evolve from new Executive Orders, legislative requirements levied through other agencies, and regulatory standards imposed against projects constructed prior to establishment of such standards. With comprehensive planning and with concern for mitigation of environmental impact and for energy conservation, the Civil Works research program is strongly addressing problems generated by these concerns.

If the Corps is to take advantage of rapidly developing technologies and techniques which offer the possibility of significant monetary savings and greater reliability, safety, and overall effectiveness, it must pursue an aggressive R&D effort. The added complexities of environmental and social considerations, energy conservation, and the mounting concern with urban problems necessitate, more than ever, increased emphasis on new approaches and methods. The request for $23,000,000 of General Investigations funds for FY 1987 is a minimum level program to accomplish only the highest priority R&D needs. It provides a modest increase in all research areas, which increase partially covers reductions due to previous program cuts and impact of inflation.

The R&D effort is a highly applied effort, utilizing in part products and techniques developed by industry and universities, and adapting them to Civil Works needs. This R&D effort is essentially a "problem solving" process by which the Corps systematically examines new ideas, approaches, and techniques, with a view toward improving the efficiency of its planning, design, construction, operations, and maintenance activities. Results of this work will be incorporated into revisions or additions to Engineer Manuals, Engineer Technical Letters, Guide Specifications, Engineer Circulars, laboratory Technical Reports, and other means of technology transfer. In considering the Civil Works R&D program against the background of the overall mission it supports, it should be noted that this mission is the most widespread and varied of the several Federal water resources programs. Yet in comparison to many other Federal agencies and private industry, the Corps of Engineers spends very little on R&D.

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The Corps manages and conducts Civil Works R&D through its four research centers: the Cold Regions Research and Engineering Laboratory (CRREL) at Hanover, NH; the Construction Engineering Research Laboratory (CERL) at Champaign, IL; the Waterways Experiment Station (WES) at Vicksburg, MS; and the Engineer Topographic Laboratories (ETL) at Fort Belvoir, VA. Some elements of Civil Works R&D are also assigned to the Corps Institute for Water Resources at Ft. Belvoir, VA and the Hydrologic Engineering Center at Davis, CA. Approximately sixty-five percent of the current research effort is accomplished inhouse and the remainder is done under contract by universities or private firms.

COORDINATION. The Corps participated in the Biennial Interagency Research Coordination Conference hosted by the Tennessee Valley Authority in Chattanooga, TN in November 1985. This biennial series has proven to be the most effective single mechanism for interagency coordination to exchange information and eliminate undesirable overlap and duplication of research in engineering fields relating to water resources development. In addition to the primary involvement of the Bureau of Reclamation, TVA, Bonneville Power Administration, and the Corps as the four "member agencies", several other agencies, including the Soil Conservation Service and the Bureau of Mines, contribute. At the conference, the research of each participating agency in several specialized technical fields is examined by the applicable principal researchers, and desirable adjustments in programs and projects are made. In between the biennial conferences, working groups in the various disciplines and program areas meet to report progress and coordinate activities. Corps researchers are in continuous close contact with NOAA, USGS, USCG, NASA, U.S. Nuclear Regulatory Commission, U.S. Navy, and other Federal agencies concerned with coastal engineering. Coordination in wastewater management is effected with Federal, State, and local government agencies participating in urban, regional, and areawide planning. Interagency coordination on remote sensing techniques is accomplished through various continuing and ad hoc groups, including: the Civil Land Satellite Program Board; the LANDSAT Interagency Program Board; and working groups established periodically to address technical or policy issues. Corps representatives, attending professional conferences, symposia, seminars, and workshops in their particular specialties (including the annual Army Science Conference held at West Point, NY, and the Joint Services Civil Engineering Research and Development Coordinating Group), present papers on specific research findings; informally exchange views, experience, and expertise; and renew, reinforce, and expand highly desirable technical communication between active practitioners in the various components of the national and international research community. Corps researchers maintain continuing contact with the research activities of universities and industry through regular membership in such organizations as the American Society of Civil Engineers, the American Concrete Institute, the American Society for Testing and Materials, the International Conference on Coastal Engineering, the American Association of Port Authorities, the Coastal Society, and the Offshore Technology Conference; assignment to and participation in their various committees, including chairmanship of many of them; and review of reports on research and other presentations contained in the proceedings, journals, and other publications of these organizations and their technical committees. Another activity which provides a good foundation for coordination is the operation of the four Corps Scientific and Technical Information Centers (Soil Mechanics, Concrete Technology, Coastal Engineering, and Hydraulic Engineering). Each of these centers acquires, examines, evaluates, and disseminates newly published and unpublished scientific and technical information generated within the U.S. and abroad.

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SUMMARIZED FINANCIAL DATA

Estimated Five-Year (FY 1987-1991) Program Cost	$123,000,000
Appropriation Requested for FY 1987	23,000,000
Balance to Complete Five-Year Program after FY 1987	100,000,000
Allocation for FY 1986	20,000,000
Increase of FY 1987 over FY 1986	3,000,000
Average Annual Allocation for FY 1982-1986	20,425,600

CURRENT RESEARCH EFFORT. For management purposes, this R&D effort is broken down into seven Research Areas, and a Technology Transfer demonstration program as noted below:

MATERIALS	COASTAL ENGINEERING	FLOOD CONTROL & NAVIGATION	ENVIRONMENTAL QUALITY	WATER RESOURCES PLANNING STUDIES	SURVEYING & SATELLITE APPLICATIONS	CONSTRUCTION, OPERATIONS, & MAINTENANCE
Soils Rock Concrete Structural Engrg Electrical/ Mechanical	Coastal Flooding & Storm Protection Harbor Entrances & Coastal Channels Shore Protection & Restoration Coastal Structure Eval & Design	Flood Control Hydraulics Navigation Hydraulics Hydrology of Cold Regions Ice Engrg	Environmental Impact Wetlands	Planning Methodologies Analytical Techniques Risk Assessment of Corps Dams	Surveying & Mapping Remote Sensing	Construction & Maintenance Management Energy Conservation Improvement of O&M Techniques Long-Term Effects of Dredging Operations Natural Resources Water Quality

RESEARCH AREA	FY 1986 ALLOCATION	FY 1987 PLANNED ALLOCATION
Materials	$ 2,390,000	$ 2,940,000
Coastal Engineering	5,380,000	6,130,000
Flood Control and Navigation	2,640,000	3,130,000
Environmental Quality	2,520,000	2,700,000
Water Resources Planning Studies	2,410,000	2,600,000
Surveying & Satellite Applications	1,110,000	1,400,000
Construction, Operations, & Maintenance	3,550,000	4,100,000
Technology Transfer	-	-
	$20,000,000	$23,000,000

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MATERIALS

SUMMARIZED FINANCIAL DATA

Estimated Five-Year (FY 1987-1991) Program Cost	$15,120,000
Allocation Requested for FY 1987	2,940,000
Balance to Complete Five-Year Program after FY 1987	12,180,000
Allocation for FY 1986	2,390,000
Increase of FY 1987 over FY 1986	550,000
Average Annual Allocation for FY 1982-1986	2,704,200

FY 1987 ACTIVITY

The Materials Research Area is concerned with the characteristics, performance, and interaction of materials, both natural and manufactured, that make up significant elements in the construction, operation, and maintenance of projects. This involves consideration of the adequacy of water resources structures with respect to safety against earthquake and hydraulic forces; protection against corrosion by means of paint and material selection; and improved techniques for design and testing of such structures.

1. The Corps research program in the geotechnical area puts primary emphasis on the safety of dams, levees, embankments, and foundations. Some examples of on-going R&D include: Continue development of a method for determining dredgeability of rock, which will allow better designs and contruction cost savings; continue development of testing techniques and technology for determining engineering properties of soils containing particles larger than one inch; continue development of methods for evaluating the liquefaction susceptibility of fine grain soils; initiate development of risk analysis techniques for geotechnical engineering to improve quality of information, avoid costly overdesign, and achieve target levels of safety; continue development of improved, more reliable, more cost-effective and less labor-intensive soil sampling methods and techniques; continue development of methods to evaluate and improve the seismic response of dams and appurtenant structures; and initiate development of guidance on reliability of rock strength test methods for design.

2. Improvements in design quality and reduction in cost of construction also are being sought in the materials research area. Examples include: Complete tests of concrete curing compounds to determine if less expensive compounds meeting American Society for Testing and Materials (ASTM) specifications were adequate for Corps of Engineers applications; continue evaluation of cementitious materials other than Portland cement; continue evaluation of improved techniques for testing concrete; continue development of improved designs for sumps for small pump stations; continue developing improved, environmentally compatible high performance coatings for hydraulic structures.

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MATERIALS (CONT)

ACCOMPLISHMENTS

1. Developed computer programs under the Computer-Aided Structural Engineering (CASE) program for the design and analysis of hydraulic structures such as cofferdams, pile foundations, conduits, and culverts, etc. These computer programs have resulted in better and faster designs, significant cost savings, and a more efficient utilization of engineering manpower.

2. Developed a method describing how to select the proper amount of pozzolan to use in concrete to minimize expansion due to alkali-silica reaction. This will reduce future maintenance requirements in Corps' concrete structures and improve safety.

3. Vibration test results of the R. B. Russell Dam, both with and without full reservoir, were compared to three-dimensional dynamic finite-element models. These unique data were used to establish the effects of reservoir mass on the ability of the dam to resist earthquakes.

4. Epoxy zinc paint formula E-303, commonly used by the Corps of Engineers for coating buried structures and structures immersed in salt and brackish water, was reformulated to eliminate solvents recently found to be toxic.

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COASTAL ENGINEERING

SUMMARIZED FINANCIAL DATA

Estimated Five-Year (FY 1987-1991) Program Cost	$32,590,000
Allocation Requested for FY 1987	6,130,000
Balance to Complete Five-Year Program after FY 1987	26,460,000
Allocation for FY 1986	5,380,000
Increase of FY 1987 over FY 1986	750,000
Average Annual Allocation for FY 1982-1986	5,706,400

FY 1987 ACTIVITY

The Corps of Engineers missions require coastal engineering expertise in the design, construction, operation, and maintenance of three general types of projects or facilities in and near the surf zones of the U.S. oceanic and Great Lakes shores: harbors for small craft for commercial and recreational fishing; harbors for large, ocean-going vessels for coastal and international commerce; and shore and beach restoration, protection, and stabilization to provide beaches to prevent or lessen erosion damage and hurricane-induced flood damage, and to provide recreation. Additionally, the Corps requires coastal engineering expertise to regulate construction in the waters of the U.S. In 1945, Congress directed the Corps to "make general investigations with a view to preventing erosion of the shores of the United States by waves and currents and determining the most suitable methods for the protection, restoration, and development of beaches; and to publish from time to time such useful data and information concerning the erosion and protection of beaches and shorelines as the Board may deem to be of value to the people of the United States" (33 USC 426a).

Under the Corps mission of protecting and restoring coastal shores, consideration is given to both structural and nonstructural solutions. The Corps R&D program develops techniques, equipment, and procedures for determining or predicting wave direction and magnitude; interactions between shore materials, protective structures, and wave forces; and the effects produced by changes in the geometric configuration of bays and inlets. Examples of current activities to improve methods and designs and to minimize costs of planning, construction, operation, and maintenance functions are:

1. Continue development of procedures for improving the Corps' capability to measure and define near-shore wave direction and for evaluating wave measuring devices.

2. Continue development procedures for evaluation of the long-term evolution of barrier islands and associated inlet and marsh systems.

3. Complete development of comprehensive selection guidance for sand bypassing systems to reduce project costs and construction time.

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COASTAL ENGINEERING (CONT)

4. Continue development of numerical models to predict effect of structures on sediment distribution on the shoreline.

5. Continue development of design guidelines for predicting shoaling patterns and rates for maintaining a navigation channel in an offshore bar.

6. Continue development of design guidance for rubble structures in the surf zone subject to overtopping.

7. Continue development of computer programs to estimate wave heights, periods, directions and spectra more accurately.

8. Continue development of methods to predict interaction between waves and currents at harbor entrances.

9. Initiate development of procedures to optimize the design of revetments and seawalls.

ACCOMPLISHMENTS

1. Developed at our Field Research Facility at Duck, NC a portable Zeiss/See Sled/Larc-V nearshore survey system to measure ocean bottom profiles with greater accuracy and less cost than methods previously being used by Corps District Offices.

2. An improved method for calculating wave overtopping rates for coastal structures has been developed. The new method provides designers with simpler yet more accurate computation of overtopping rates which correlate well with realistic storm conditions, thereby allowing better, more cost-effective designs to be made.

3. An innovative streamer-type sediment trap was developed for measuring longshore and cross shore sediment transport. Although labor intensive, the sediment trap provides more accurate measurement of sediment movement, which is necessary for improved design of coastal projects.

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FLOOD CONTROL AND NAVIGATION

SUMMARIZED FINANCIAL DATA

Estimated Five-Year (FY 1987-1991) Program Cost	$16,730,000
Allocation Requested for FY 1987	3,130,000
Balance to Complete Five-Year Program after FY 1987	13,600,000
Allocation for FY 1986	2,640,000
Increase of FY 1987 over FY 1986	490,000
Average Annual Allocation for FY 1982-1986	2,742,600

FY 1987 ACTIVITY

This research area is concerned with improving cost-effectiveness in design and construction of engineering works for flood control, navigation, and related purposes, including channels and canals, locks and dams, levees and floodwalls, channel and bank stabilization, diversion structures, pumping stations, and hydropower plants. Some examples of current activities to improve methods and designs and to minimize costs of planning, design, and construction functions are:

1. Continue development of hydraulic design criteria and procedures manual for improving project design and operations.

2. Continue development of methods to optimize bank protection for navigable waterways subjected to vessel generated waves.

3. Continue development of guidance to better define channel dimensions necessary for safe and efficient navigation of inland waterways.

4. Complete work on criteria and guidelines for development of hydropower at existing and future inland waterway navigation projects to eliminate or reduce adverse effects on navigation.

5. Continue to develop improved guidelines for design of stable riprap linings for protection of flood control channels.

6. Complete development of spur dike design procedures based on movable bed model tests.

7. Continue development of methods to detect and control frazil ice accumulations.

8. Initiate development of improved grade control and drop structures to provide more stable flood control projects.

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FLOOD CONTROL AND NAVIGATION (CONT)

9. Continue development of procedures for designing stable flood control channels.

10. Continue to develop techniques to measure soil moisture beneath snow cover, whether frozen or unfrozen, to improve runoff predictions and spring flood estimates.

ACCOMPLISHMENTS

1. In cooperation with the Coast Guard, tow maneuverability tests were conducted in Lake Pontchartrain. Information from these tests is essential for evaluating our navigation channel design requirements to improve safety and minimize cost of channel maintenance.

2. A new mathematical model to compute vertical ship motion (heave and pitch) response to wave motion in harbor entrance channels has been developed. The model will be used to provide optimum deep-draft navigation channel depths designs.

3. A new system has been developed which can successfully photograph, for the first time, the growth of frazil ice under controlled turbulent flow conditions. The system includes a fiber optics-coupled strobe light capable of imaging rapidly moving ice particles in a stream. Understanding frazil ice, and being able to control it, is a key element in many ice engineering problems.

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SUMMARIZED FINANCIAL DATA

Estimated Five-Year (FY 1987-1991) Program Cost	$14,500,000
Allocation Requested for FY 1987	2,700,000
Balance to Complete Five-Year Program after FY 1987	11,800,000
Allocation for FY 1986	2,520,000
Increase of FY 1987 over FY 1986	180,000
Average Annual Allocation for FY 1982-1986	2,661,000

FY 1987 ACTIVITY

The Environmental Quality Research Area is concerned with how the construction, operation, and maintenance of Corps water resources projects impact on the environment and the maintenance of national water quality standards. The planning, development, and management of water resources projects require R&D to assure compliance with Federal and State environmental legislation and regulations at a reasonable cost. Many of these recent regulations have tightened the environmental quality standards and constraints on water resources projects, thereby increasing the need for improved capabilities to attain and maintain this higher level of environmental quality. To achieve this objective effectively and economically, the R&D program is concerned with the development of techniques and procedures for assessing, evaluating, and controlling the impacts of Corps activities on the environment. Some examples of these developments are:

1. Continue development of procedures to define and quantify the ecological effects of rubble groins, jetties, and breakwaters in coastal areas and the Great Lakes.

2. Complete development of methodologies for evaluating the environmental impact of engineering activities which alter the physical system that, in turn, affects estuarine circulation patterns.

3. Complete development of a visual evaluation procedure for landscape inventory and visual impact assessment of Corps projects.

4. Complete the evaluation of existing marsh/estuarine water quality and ecological modeling techniques to determine their usefulness in addressing environmental problems associated with Corps activities in coastal regions, developing improved modeling where required.

5. Continue development of procedures for measuring or predicting the environmental impacts of a project's structural and operational alternatives on important estuarine and marine fisheries resources.

ENVIRONMENTAL QUALITY (CONT)

6. Continue development of methodology for evaluating the effects of channel deepening and jetties on fish and shellfish migration.

7. Initiate development of innovative, low-cost approaches for mitigation of environmental impact of water resource projects.

8. Continue to develop qualitative techniques for the identification and assessment of wetlands functional values.

9. Initiate development of guidelines for riparian zone restoration and management.

ACCOMPLISHMENTS

1. An instruction report entitled "Restoration of Problem Soil Materials at CE Construction Sites" was developed and distributed to all Divisions and Districts. The report provides state-of-the-art techniques for effectively and economically dealing with restoring soils and ground cover disturbed by construction and other activities.

2. Over 30 profiles of life history and fishery information on key coastal and estuarine species of fishes and invertebrates have been published. These profiles are essential to Corps planners, engineers, and operating personnel for determining impacts of Corps construction and operations on these species.

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WATER RESOURCES PLANNING STUDIES

SUMMARIZED FINANCIAL DATA

Estimated Five-Year (FY 1987-1991) Program Cost	$14,620,000
Allocation Requested for FY 1987	2,600,000
Balance to Complete Five-Year Program after FY 1987	12,020,000
Allocation for FY 1986	2,410,000
Increase of FY 1987 over FY 1986	190,000
Average Annual Allocation for FY 1982-1986	2,306,400

FY 1987 ACTIVITY

The Water Resources Planning Studies Research Area includes research and development activities leading to improvements in both the methods which provide the conceptual basis for conducting Civil Works planning investigations and the analytical techniques which provide the planning tools needed to implement the concepts. Research activities carried out within this program involve integrated consideration of three major scientific areas: natural or environmental sciences; physical or engineering sciences; and social sciences. Specific research studies range from analysis of methods for facilitating public involvement in water resources planning to development of mathematical models for estimating the effects of future urbanization on potential flood hazards. The fundamental objectives of this program are: to increase the knowledge and understanding of the physical, economic, social, and environmental relationships inherent in planning for development and management of the Nation's water resources; and to develop concepts and procedures for incorporating this knowledge into the planning process in a way which provides a better basis for professional, public, and governmental evaluation without producing inordinate increases in planning costs or time. The program is of a continuous nature, but its specific focus at any given time is dictated by problems and needs which result from changes occasioned by: legislative mandates such as PL 92-500; and revisions in broad Federal guidance for water resources planning. Some examples of current activities leading to improvements in both methods and techniques for the Civil Works planning function are:

1. Continue development of a methodology and data base which will enable Corps planners to determine regional development impacts in a consistent and efficient manner.

2. Continue development of improved techniques for formulating and evaluating demands, alternatives and benefits for multipurpose and multireservoir systems.

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WATER RESOURCES PLANNING STUDIES (CONT)

3. Continue development of a National Economic Development procedures manual.

4. Continue development of a real-time data management, reservoir operation model/river control system, for use in Corps river regulation projects.

5. Initiate development of flood forecasting hardware and software for use in small, local flood warning systems.

6. Continue development of methods of forecasting water demand to fully evaluate the application of conservation measures.

7. Continue development of conjunctive water supply planning and evaluation methods for examining surface and ground water supply and water conservation alternatives.

ACCOMPLISHMENTS

1. Published an Urban Flood Damage Reduction National Economic Development (NED) Procedures Manual that explains the basic concepts of computing NED benefits for flood damage reduction. The manual will establish consistent definitions and procedures and provide time and cost savings in preparation and execution of economic analysis.

2. A personal computer version of the Ratio Forecasting Program was developed and published. This program provides a time saving tool to enable planners to generate analytically defensible forecasts of socioeconomic characteristics for small study areas.

3. Under Corps of Engineers and Bureau of Reclamation sponsorship and funding, the National Research Council performed a review of current dam safety criteria and the utility of risk analysis for low probability/high consequence events such as dam failure. The product of the review is a highly acclaimed publication titled "Safety of Dams, Flood and Earthquake Criteria".

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SURVEYING & SATELLITE APPLICATIONS

SUMMARIZED FINANCIAL DATA

Estimated Five-Year (FY 1987-1991) Program Cost	$7,560,000
Allocation Requested for FY 1987	1,400,000
Balance to Complete Five-Year Program after FY 1987	6,160,000
Allocation for FY 1986	1,110,000
Increase of FY 1987 over FY 1986	290,000
Average Annual Allocation for FY 1982-1986	1,022,000

FY 1987 ACTIVITY

The Surveying and Satellite Applications Research Area includes research, development, test, and evaluation activities necessary to adapt and apply new technology in surveying and mapping and in satellite remote sensing and positioning systems to improve Corps functions and minimize costs. The remote sensing portion of this program is a continuing effort to explore fully the numerous technical and economic capabilities that are becoming available. Activities to be addressed include consideration of data element interpretation techniques, data handling, and the contributions of satellite-acquired data to water resources planning and management models. The Corps is exploring the use of the precise measurement and positioning capabilities developed to support the dam safety program and those derived from Army/NASA satellite research and development to meet some of the needs of its water resources program. Research activities in the current program include:

1. Continue development of the global positioning system for use by Corps surveyors as a high-precision and special-purpose survey tool.

2. Complete demonstration and development of the use of LANDSAT data for updating flood damage data bases.

3. Continue development of remote sensing techniques to provide accurate coastal engineering data.

4. Continue development of techniques to use airborne sensors for wildlife habitat identification and mapping.

5. Continue development of in-situ automated procedures for measurement of hydrologic and environmental parameters in cold regions.

6. Initiate development of a system to spatially distribute snow pack information from satellite and aircraft data.

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SURVEYING AND SATELLITE APPLICATIONS (CONT)

ACCOMPLISHMENTS

1. A Corps of Engineers Remote Sensing Bulletin has been established and three editions published in the past year. The bulletin is an excellent technology transfer medium useful to Corps researchers and engineers in the field as well as by keeping readers aware of on-going work and the latest technology available.

2. Work was completed on a survey boat heave correction system study. Use of heave correction equipment will improve survey accuracy by accounting for low frequency waves encountered during the survey. More accurate surveys will result in cost savings to the Corps, as in the case of pre- and post-dredge surveys.

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CONSTRUCTION, OPERATIONS, AND MAINTENANCE

SUMMARIZED FINANCIAL DATA

Estimated Five-Year (FY 1987-1991) Program Cost	$21,880,000
Allocation Requested for FY 1987	4,100,000
Balance to Complete Five-Year Program after FY 1987	17,780,000
Allocation for FY 1986	3,550,000
Increase of FY 1987 from FY 1986	550,000
Average Annual Allocation for FY 1982-1986	3,192,000

FY 1987 ACTIVITY

The Corps of Engineers mission responsibilities in the field of water resources development include the primary functions of construction and operation and maintenance (O&M) of water resource facilities, including locks, dams, reservoirs, powerhouses, waterways, levees, floodwalls, bridges, roads, recreation facilities, and coastal works. Operating and maintaining these water resource projects consumes the efforts of more than half of Corps Civil Works personnel and an ever-increasing portion of the total Civil Works budget. Although in recent years construction has been decreasing in total volume, it remains a primary Civil Works activity. In order to continue to accomplish these construction and O&M functions in an environment of fiscal and manpower constraints without diminishing serviceability, health, or safety, a broadly-based research and development effort is urgently needed to provide new or improved materials, methods, and techniques to increase efficiency and save manpower and funds while retaining or improving reliability, safety, and overall effectiveness of each project, giving full consideration to environmental and social considerations. Examples of current activities include:

1. Complete development of procedures for estimating the level of contaminants in dredged material containment area discharges.

2. Complete studies to define and predict the dynamic behavior and deposition mechanics of fine-grained material in navigation channels.

3. Continue development of guidance for design and operation of single wet-well outlet structures which blend flows from different reservoir elevations for water quality maintenance.

4. Continue to develop methods to determine and interpret environmental effect of contaminant mobility, bioaccumulation, and biomagnification of toxic substances in dredged material, focusing on toxic substances chemical processes, including long-term effects, techniques for sampling and measuring low-level toxic substances, and for estimating pollution potential of area discharge.

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CONSTRUCTION, OPERATIONS, AND MAINTENANCE (CONT)

5. Complete development of procedures for predictive interpretation of cumulative environmental effects of dredged material disposal under various conditions (nearshore, capped, sequential disposal, etc.).

6. Continue development of techniques for reducing O&M resource requirements and increasing management efficiency at Corps recreation areas.

7. Continue development of management procedures for evaluating the environmental effects of using plant growth regulators and inhibitors on recreation areas and earthen dams.

8. Continue evaluation of technologies to reduce petroleum energy use in Civil Works activities.

9. Initiate development of improved control measures for reducing contaminant release into the environment during dredging, transport, and placement of contaminated dredged material.

ACCOMPLISHMENTS

1. Use of advance maintenance dredging was demonstrated to be an effective technique in reducing dredging costs. WES provided advice on use of advance maintenance to Corps offices and the U.S. Navy. An Engineer Technical Letter and technical report were prepared that convey results of the research. These publications will be used by field offices to design cost-saving advance maintenance projects.

2. A field demonstration of high density polyethylene pipe (HDPE) in a dredging application was conducted. The demonstration was a joint endeavor of the Waterways Experiment Station, the Portland District, and the Port of Astoria, WA. The demonstration indicated significant advantages of HDPE in many circumstances. Results of this demonstration will be combined with previous results in publications giving guidelines for field office use and specification of HDPE.

3. Research was completed on expedient methods for flood fighting that could save millions of dollars in damaged caused by failure of emergency flood walls. A report was completed describing research findings on expedient flood walls which can be used by the Corps of Engineers and other flood fighting agencies.

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TECHNOLOGY TRANSFER

	FY 1986 Allocation	FY 1987 Request
	-	-

In FY 1984 a new field demonstration program was initiated to develop an innovative model to transfer to public and private sectors new applications and uses for the technology arising from the research and development activities of the Corps of Engineers, especially to rural areas and communities suffering from long-term economic distress. Emphasis is on an active "hands-on" approach as mandated by the Stevenson-Wydler Technology Innovation Act, P.L. 96-480, Section 11.

The southeastern part of Oklahoma has been selected as the prototype demonstration area. An effective model will ultimately benefit the American public by providing a vehicle through which Corps of Engineers resources can be effectively utilized and increase economic potential for government and industrial projects in rural or distressed areas.

Work continued in FY 1986 using funds carried over from FY 1985 not expended by the contractor for the project. Phase I of this contract effort was completed 30 April 1985. Phase II began 1 May 1985 and is due to be completed 31 March 1986. To date no new industries using Corps of Engineers technology have been established. However, some Corps of Engineers technology has been transferred to state and local government entities. Negotiations are underway to initiate Phase III of the contract, which phase is expected to be the final phase of this Technology Transfer effort.

Justification of Estimates for Civil Functions Activities
Department of the Army, Corps of Engineers
Fiscal Year 1987

SUMMARY OF REMAINING ITEMS

CONSTRUCTION, GENERAL

	FY 1986 Allocation $	FY 1987 Request $	Increase or Decrease $
2. Navigation Projects			
a. Channels and Harbors			
(II) Projects Not Specifically Authorized by Congress (Sec. 107)	9,365,000	6,900,000	-2,465,000
(III) Mitigation of Shore Damages Attributable to Navigation Projects (Sec. 111)	850,000	300,000	- 550,000
3. Beach Erosion Control Projects			
b. Projects Not Specifically Authorized by Congress (Sec. 103)	2,150,000	2,100,000	- 50,000
4. Flood Control Projects			
a. Local Protection			
(II) Projects Not Specifically Authorized by Congress (Sec. 205)	30,000,000	30,000,000	0
(III) Emergency Streambank and Shoreline Protection (Sec. 14)	7,400,000	7,500,000	+ 100,000
(IV) Snagging and Clearing (Sec. 208)	1,200,000	1,200,000	0
6. Dam Safety Assurance Program	4,000,000	21,000,000	+17,000,000
10. Aquatic Plant Control Program	9,000,000	8,000,000	- 1,000,000
11. Employees' Compensation (Payments to Department of Labor)	10,641,000	10,973,000	+ 332,000
Total	74,606,000 1/	87,973,000	+13,367,000

1/ Does not reflect reductions required by the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177).

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APPROPRIATION TITLE: Construction, General, FY 1987

2. Navigation Projects

a. Channels and Harbors

(II) Projects not Specifically Authorized by Congress (Sec. 107, PL 86-645, as amended)

FY 1986 Allocation $9,365,000 FY 1987 Request $6,900,000

GENERAL: Section 107 of the R&H Act of 1960, as amended, authorizes up to $25,000,000 annually for construction of navigation projects where such construction is not already specifically authorized by Congress. Projects are designed to provide the same complete navigation project that would be provided under regular authorization procedures. Each project selected must be economically justified and complete-within-itself. Federal cost participation cannot exceed $2,000,000 per project.

BUDGET REQUEST: Funds in the amount of $6,900,000 are requested for Fiscal Year 1987 to continue the Section 107 program of development and construction of navigation projects at locations throughout the Nation. Funds included in this request for initiation of detailed project studies are sufficient to provide one half of the study cost, the balance will be provided by a non-Federal sponsor. Funds included in this request for initiation of construction will be utilized when the benefit to cost ratio for Federal participation in the project is favorable based on commercial navigation outputs. Project construction cost-sharing will be consistent with the cost sharing concepts agreed to by the Administration and the Senate Majority Leadership.

APPROPRIATION TITLE: Construction, General, FY 1987

2. Navigation Projects

(a) Channels and Harbors (Continued)

(III) Mitigation of Shore Damages Attributable to Navigation Projects (Sec. 111, PL 90-483).

FY 1986 Allocation $850,000 FY 1987 Request $300,000

GENERAL: Section 111 of the R&H Act of 1968 authorizes the construction of projects for the prevention or mitigation of shore damages attributable to Federal navigation works. The cost of installation, operation, and maintenance shall be borne entirely by the United States. No such projects shall be constructed without specific authorization by Congress if the estimated first cost exceeds $1,000,000.

BUDGET REQUEST: Funds in the amount of $300,000 are requested in Fiscal Year 1987 to continue the program of mitigation of shore damages attributable to Federal navigation works.

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APPROPRIATION TITLE: Construction, General, FY 1987

3. Beach Erosion Control Projects

b. Projects Not Specifically Authorized by Congress (Sec. 103, PL 87-874, as amended)

FY 1986 Allocation $2,150,000 FY 1987 Request $2,100,000

GENERAL: Section 103 of the R&H Act of 1962, as amended, authorizes the allotment of not more than $25,000,000 annually for construction of shore and beach restoration and protection projects where not already specifically authorized by Congress. Each project selected must be economically justified and complete-within-itself. Not more than $1,000,000 can be allotted for any single project and the total amount allotted must complete the Federal participation. Projects under this special authority are formulated to provide the same complete-within-itself project provided under regular authorization procedures.

BUDGET REQUEST: Funds in the amount of $2,100,000 are requested for Fiscal Year 1987 to continue the Section 103 program of development and construction of beach erosion control along the Nation's coastline. Funds included in this request for initiation of detail project studies are sufficient to provide one half the study cost, the balance will be provided by a non-Federal sponsor. Funds included in this request for initiation of construction will be utilitzed when the benefit to cost ratio for Federal participation in the project is favorable based on erosion control outputs. Project construction cost-sharing will be consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

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APPROPRIATION TITLE: Construction, General, FY 1987

4. Flood Control Projects

a. Local Protection

(II) Projects Not Specifically Authorized by Congress (Sec. 205, PL 80-858, as amended)

FY 1986 Allocation $30,000,000 FY 1987 Request $30,000,000

GENERAL: Section 205 of the Flood Control Act of 1948, as amended, authorizes up to $30,000,000 annually for construction of flood control projects where such construction is not already specifically authorized by Congress. Projects are designed to provide the same complete project and same degree of protection provided under regular authorization procedures. Each project selected must be economically justified and complete-within-itself. Federal cost participation can not exceed $4,000,000 per project.

BUDGET REQUEST: Funds in the amount of $30,000,000 are requested for Fiscal Year 1987 to continue the Section 205 program of development and construction of flood damage prevention projects at locations throughout the Nation. Funds included in this request for initiation of detailed project studies are sufficient to provide one half the study cost, the balance will be provided by a non-Federal sponsor. Project construction cost-sharing will be consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

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APPROPRIATION TITLE: Construction, General, FY 1987

4. Flood Control Projects

a. Local Protection (Continued)

(III) Emergency Streambank and Shoreline Protection (Sec. 14, PL 79-526, as amended)

FY 1986 Allocation $7,400,000 FY 1987 Request $7,500,000

GENERAL: Section 14 of the Flood Control Act of 1946, as amended, authorizes an allotment not to exceed $10,000,000 annually for the construction of emergency bank protection works to prevent flood damages to highways, bridge approaches, public works, churches, hospitals, schools and other non-profit public services. Each Section 14 project must be economically justified and the Federal participation under this authority is limited to a cost of not more than $250,000 at any single locality. Work under this authority prevents flood damages to the above mentioned items that represent significant investments of Federal, State, and local funds and are a general benefit to the entire locality.

BUDGET REQUEST: Funds in the amount of $7,500,000 are requested in Fiscal Year 1987 to continue the program of emergency bank protection construction to prevent flood damages to highways, bridge approaches, and essential public facilities at locations throughout the nation. In view of the emergency nature of these projects, construction funds will be provided upon approval of a project.

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APPROPRIATION TITLE: Construction, General, FY 1987

4. Flood Control Projects

a. Local Protection (Continued)

(IV) Snagging and Clearing (Sec. 208, PL 83-780, as amended)

FY 1986 Allocation	$1,200,000	FY 1987 Request	$1,200,000

GENERAL: Section 2 of the Water Resources Development Act of 1937, as amended by Section 208 of the Flood Control Act of 1954 and Section 26 of the Water Resources Development Act of 1974, authorizes an allotment not to exceed $5,000,000 annually for removing accumulated snags and other debris, and clearing and straightening of the channels in navigable streams and tributaries thereof, when in the opinion of the Chief of Engineers such work is advisable in the interest of flood control. Federal cost participation under this authority is limited to a cost of not more than $250,000 for any single tributary. Each project selected must be economically justified and complete-within-itself. Local interests must provide the necessary lands, easements, and rights-of-way and agree to provide, when required, additional financing and cost-sharing satisfactory to the Secretary of the Army.

BUDGET REQUEST: Funds in the amount of $1,200,000 are requested in Fiscal Year 1987 to continue the program of channel clearing in the interest of flood control at locations throughout the Nation.

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APPROPRIATION TITLE: Construction, General, FY 1987

6. Dam Safety Assurance Program

FY 1986 Allocation $4,000,000 FY 1987 Request $21,000,000

General: The Dam Safety Assurance Program provides for modification of completed Corps of Engineers dam projects. There are over 600 dam projects which are under Corps jurisdiction. While no Corps dams are in imminent danger of failure, the risk for some may be higher than originally anticipated, in light of experience gained with the potential for extremely large floods and seismic events. Criteria for evaluation of the safety of existing dams were recently reviewed by the National Research Council and its recommendations are now being analyzed to determine how they might be integrated into the decision process for dam modification work at specific locations. Until this analysis is completed, dam modification work is proceeding under existing authorities on projects where cost-effective risk reduction measures have been identified and approved.

Budget Request: This Corps-wide budget item includes $21,000,000 for Dam Safety Assurance new starts which may be approved during FY 1986 and FY 1987 as a result of studies now underway. The total FY 1987 budget request for the Dam Safety Assurance Program is $34,960,000. Of the 36 dam projects selected as candidates most likely to require modification under the Program, four specific projects have been approved by the Assistant Secretary of the Army (Civil Works) and were recommended as Dam Safety Assurance new starts in FY 1986. Funds in the amount of $13,960,000 to continue these projects in FY 1987 are included with the budget request for each applicable Division. The four specifically approved projects are:

Project	FY 1987 Request
Addicks and Barker Dams, TX	$4,900,000
Barkley Dam, KY	3,000,000
Jemez Canyon Dam, NM	2,060,000
Mud Mountain Dam, WA	4,000,000
Total	$13,960,000

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APPROPRIATION TITLE: Construction, General, FY 1987

10. Aquatic Plant Control Program

AUTHORIZATION: Section 104 of the River and Harbor Act of 1958, (P.L. 85-500), as amended.

SUMMARIZED FINANCIAL DATA:

	FY 1987
Estimated (FY 1987-91) Program Cost	45,000,000
Allocation Requested for FY 1987	8,000,000
Balance to Complete Program after FY 1987	37,000,000
Allocation for FY 1986	9,000,000
Decrease in FY 1987 from FY 1986	1,000,000
Average Annual Allocation for FY 1982-1986	6,036,000

JUSTIFICATION:

An estimated 1.6 million surface acres of water nationwide are now infested with problem aquatic plants with the potential to spread to 53 million acres nationwide. Exotic species such as water hyacinth, alligatorweed, Eurasian water milfoil, cabomba, egeria and water chestnuts continue to expand from local infestations, particulary in the Southern United States. Additionally, obnoxious populations of aquatic plants are being discovered in states where previous problems had not existed, e.g., hydrilla in the Potomac River (Maryland, Virginia and Washington, D. C. area). Eurasian water milfoil infestations now pose a threat to water uses in the Northwest unless control measures are continued. Hydrilla has begun to cause problems in Texas and continues to spread in Florida, Louisiana and other Southeastern states. New and expanding demands for aquatic plant control have been demonstrated in Puerto Rico, North Carolina, South Carolina, Vermont and the Potomac area. In areas where obnoxious aquatic plant populations have been recently discovered, preventative and early control measures are extremely important in limiting future problems which may become increasingly difficult and expensive to control. If control measures are not accomplished, aquatic plants can seriously impair navigation, flood control, drainage, agriculture, fish and wildlife conservation, public health and other water related uses.

ACCOMPLISHMENTS:

Appropriations in FY 1986 permit control of major infestations of problem plants in critical areas. In FY 1986, the program will involve planning and/or control operations in 18 states and Puerto Rico. Research efforts have yielded advances in control methods, i.e., herbicides, mechanical harvesters and biological

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ACCOMPLISHMENTS (CONT'D)

agents. Operations management tests for control of hydrilla and water hyacinths are underway as technology transfer projects. Integrated control techniques are being developed and tested. Results of research efforts are being transferrad to operational elements as quickly as possible.

FISCAL YEAR 1987:

The $8,000,000 requested for FY 1987 will be used for technology transfer, research, control operations and planning. Local interests must agree to hold and save the United States free from claims and, under the requirements of P. L. 85-500, as amended, to participate at least to the extent of 30 percent of the cost of the control operations. Cost sharing under proposed legistation (S. 1567) would require 50 percent non-Federal participation in the operational program. FY 1987 funds will be allocated as follows:

a. Applied Research. $2,220,000 will be used for improvement of aquatic plant control methods. The objective of the research program is to develop more efficient, cost-effective and less hazardous methods of control than currently are available, and to do so in a timely manner through appropriate technology transfer techniques. Current research efforts include the study of biological, chemical, mechanical and integrated control measures. Research efforts are fully coordinated with other Federal, state and local agencies to prevent duplication of effort and to assure research which is consistent with, and complementary to, the efforts of others.

b. Control Operations. $5,322,000 will be utilized for control operations under state cost sharing programs, with highest priority given to those states which have the most serious aquatic plant control problems. Emphasis will be placed on control in critical areas, maintenance of populations which have been controlled to maintenance status and prevention and early control of plants which have the potential to increase beyond our control capabilities in the near future.

c. Planning. $458,000 will be utilzed for surveys of problem areas, preparation of reports, agreements, annual work plans, coordination with other Federal agencies and with states and their political subdivisions, and implementation of new plant control operations. As infestations of problem plants are discovered in areas where previous problems had not existed, new planning efforts are required.

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APPROPRIATION TITLE: Construction, General

11. Employees' Compensation (Payments to Department of Labor)	FY 1985	FY 1986	FY 1987
	$10,386,000	$10,641,000	$10,973,000

Public Law 94-273, approved April 21, 1976, (5 U.S.C. 8147, paragraph b) provides that each agency shall include in its annual budget estimates a request for an appropriation equal to costs previously paid from the Employees' Compensation Fund on account of injury or death of employees or persons under jurisdiction of said agency.

The amount of $10,973,000 represents the total costs of benefits and other payments made from the Employees' Compensation Fund during the period July 1, 1984 through June 30, 1985 on account of injury or death of persons under the jurisdiction of the Corps of Engineers Civil Functions.

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Justification of Estimates for Civil Functions Activities
Department of the Army, Corps of Engineers
Fiscal Year 1987

OPERATION AND MAINTENANCE, GENERAL -- SUMMARY OF REMAINING ITEMS

O&M Remaining Item	FY 1986 Allocation	FY 1987 Appropriation Request	FY 1987 Change From FY 1986
	$	$	$
1. NAVIGATION			
a. Channels and Harbors			
(1) Monitoring of Completed Coastal Projects	1,000,000	1,200,000	(+)200,000
b. Locks and Dams			
(1) River Ice Management (RIM) Research	3,850,000	2,205,000	(-)1,645,000
(2) Repair, Evaluation, Maintenance, and Rehabilitation (REMR) Research	7,870,000	7,780,000	(-)90,000
6. PROTECTION OF NAVIGATION			
a. Removal of Sunken Vessels	2,307,000	1,000,000	(-)1,307,000
b. Protecting, Clearing and Straightening Channels	100,000	50,000	(-)50,000
c. Surveillance of Northern Boundary Waters	2,000,000	2,204,000	(+)204,000
d. Commercial Statistics	2,890,000	3,022,000	(+)132,000
7. NATIONAL EMERGENCY PREPAREDNESS PROGRAM (Mobilization Planning)	9,900,000	13,500,000	(+)3,600,000
Total Operation and Maintenance, General, Remaining Items	29,917,000	30,961,000	(+)1,044,000

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APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. NAVIGATION

a. Channels and Harbors
(1) Monitoring of Completed Coastal Projects

SCOPE: A selective and intensive monitoring of Civil Works coastal projects is executed to acquire information to improve project purpose attainment, design guidance, construction methods, and operation and maintenance techniques. Projects that provide maximum quantity and quality of applicable data addressing predominant coastal engineering problem areas are identified and those that best address high-priority problems are selected for monitoring and evaluation. Monitoring plans are developed by Corps of Engineers Districts and consist of either a comprehensive detailed survey to verify post-construction conditions on a one-time basis or a continuous (or repetitive) collection of prototype data. Generally, monitoring efforts will not exceed five years in length. The intensive data base is analyzed and the prototype results compared to the pre-construction predictions to verify or upgrade existing design guidance, minimize operation and maintenance cost, and assure project-formulated benefits. The analyses include structural, topographic, and hydrodynamic responses and intercomparisons of projects when applicable.

SUMMARIZED FINANCIAL DATA:

Estimated Five-Year (FY 1987-1991) Program Cost	$8,300,000
Allocation Requested for FY 1987	1,200,000
Balance to Complete Five-Year Program after FY 1987	7,100,000
Allocation for FY 1986	1,000,000
Increase of FY 1987 over FY 1986	200,000
Average Annual Allocation for FY 1982-86	876,000

JUSTIFICATION: A national program is needed to monitor, evaluate, and document the performance of projects that are designed to solve or mitigate major coastal problems. Coastal engineering projects often involve large financial investments. Overly conservative design of structures may require liberal funding. Conversely, a deficient design often leads to excessive operation and maintenance costs. This program monitors project performance, evaluates the performance against preconstruction projections, and transfers the sometimes costly lessons learned into guidance for the field and management staff. Coastal topography is often changed in response to constructed features of coastal projects. Currents, waves,

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flushing characteristics, tidal stages, and other hydrodynamic phenomena are also changed by the construction of coastal projects. Information gained from monitoring coastal engineering parameters, including the magnitude and rate of these changes, is required to verify design expectations, ascertain benefits, and evaluate operational and maintenance efficiencies. Information collected from monitored coastal projects will be analyzed locally with regard to topographic and hydrodynamic responses and project performance in relation to the need of each project. Additionally, this information will be collected and analyzed on a national basis to satisfy the need to document successful designs and to disseminate upgraded field guidance.

ACCOMPLISHMENTS: Fifteen projects have been selected for monitoring. Four monitoring programs have been completed and two have not been started. An Engineer Manual on "Monitoring Coastal Projects" has been drafted. The pattern of concrete armor unit movement at Cleveland Harbor, Ohio, has been documented and reports were published on the monitoring program and subsurface inspection of coastal structures via side-scan sonar imagery. Using data collected from East Rockaway, New York, and Manasquan Inlet, New Jersey, a computer program to place survey data in a computer file directly from a surveyor's field book and subsequently analyze the data by the Beach Profile Analysis System was implemented. The system provides a faster, more accurate and cost-efficient analysis of beach profile data. High-resolution photogrammetric measurements were demonstrated in the Manasquan Inlet monitoring program, where the movement of dolosse armor units was determined to within 0.2 ft and the findings were disseminated at the Corps of Engineers Remote Sensing Symposium. The validity of Jarrett's inlet stability equation was demonstrated at Manasquan Inlet by comparing analytical predictions with the measured inlet area and tidal prism. Data obtained on the performance of the beach fill at Carolina Beach, North Carolina, compared favorably with the renourishment predictions in the Shore Protection Manual. The efficacy of a newly developed shallow water wave hindcast model was demonstrated with data acquired from Cleveland Harbor. At all the monitoring projects the data have been useful in the preliminary evaluation of project performance and in the adjustment of operation and maintenance programs.

FISCAL YEAR 1987:

ITEM	FY 1986	FY 1987
Recommended Monitoring Plan Reports	$ 30,000	$30,000
Monitoring and Data Reports	870,000	1,050,000
Program Management and Data Storage	100,000	120,000
	$1,000,000	$1,200,000

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COORDINATION: Coordination between the Corps of Engineers and other Federal, State, and local agencies is essential for proper accomplishment of this program. In addition to satisfying Corps of Engineers requirements, the data will be made available through publications and will be of value to local, State, and other Federal agencies tasked with the development and implementation of rational coastal and offshore management policies.

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APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation

   b. Locks and Dams
      (1) River Ice Management (RIM) Research

SUMMARIZED FINANCIAL DATA:

Estimated Total (FY 1983-88) Program Cost	$12,000,000
Allocation for FY 1986	3,850,000
Allocation Requested for FY 1987	2,205,000
Balance to Complete after FY 1987	1,150,000
Decrease of FY 1987 from FY 1986	-1,645,000

JUSTIFICATION: The Corps of Engineers has broad responsibility for the operation and maintenance of the Nation's waterways, as well as for providing reliable avenues for waterborne commerce. Across the northern United States, ice presents a major physical impediment to winter navigation on domestic waterways, particularly in those areas accustomed to year-round navigation. The challenge is to develop ice control techniques which will permit cost-effective, reliable, and safe navigation throughout the year without adverse environmental effects.

Ice-prone rivers in this country directly serve 19 states with 45 percent of the US population. These rivers also serve as conduits to eight other river states and connect the US heartland to worldwide markets through the Gulf of Mexico, the ports of the northwest, and the St. Lawrence Seaway.

Ice management has now become a particularly critical problem for the Corps. Tonnage on domestic waterways is expected to increase sharply over the next 15 years because of a two-fold increase in the domestic demand for coal and coal export. Cost-and-energy-effective bulk shipment of coal is an essential element in the development of coal as a major energy source. Domestic waterways, especially those that are ice-prone, will play a key role in the coal distribution system which will evolve in the coming years. As traffic on domestic waterways increases, the inefficiencies and blockages caused by ice during the winter will become increasingly intolerable. More effective ice management can prove to be one of the most cost-effective ways to increase total waterway system capacity.

When navigation stops or is greatly curtailed on these key systems, the river-dependent portion of the national economy is severely affected. Winter navigation penalties on the Upper Mississippi, Illinois, and Ohio Rivers are between $40 and $50 million annually. Also, public and private property damages due to ice are estimated at $17 million annually on the ice-prone navigable rivers. Ice-related economic disruption costs are not included but are severe. Ice-jam flooding costs as the primary ice-related emergency were an estimated $28 million in 1980. In view of the annual direct costs to the Nation, a program of research and development aimed at providing solutions to the river ice problem is a worthwhile effort and cost-effective investment.

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RIVER ICE MANAGEMENT (CONT)

MAJOR FEATURES OF THE FY 1987 PROGRAM: The purpose of this program is to develop structural and operational solutions to ice problems on river systems used for navigation. After conducting research into promising techniques for ice control and demonstrating these techniques through limited field tests, new techniques would be developed and institutional approaches for their employment would be established. The research results would provide an array of solutions to be used by Corps Districts to develop ice management plans for navigable rivers which presently experience winter delays and unexpected ice emergencies. The cost of implementing a particular management plan would be compared to the benefits for the specific river to determine feasibility. Environmental impacts will also be evaluated in specific river ice management plans. Major research efforts planned for FY 1987 are:

1. Forecasting Ice Conditions on Inland Rivers. Continue development of an analytical model capable of predicting ice growth and movement on navigable rivers using temperatures, flow, weather forecasts, etc. Continue development of a manual on winter navigation options on inland rivers.

2. Remote Ice Monitoring System. Continue development of a real-time automated system to monitor ice growth, movement, and decay. Continue development of new in-situ sensors to measure ice thickness.

3. Vessel-based Techniques for Ice Management. Conclude laboratory modeling of auxiliary ice breaking attachments in both deep and shallow water. Continue field tests of scaled prototype ice prow, concentrating on actual ice removal performance (i.e., disposal of ice to the sides of the ship channel).

4. Ice Control Structures. Continue efforts to determine and demonstrate methods which best control ice, such as log booms, groins, or single-point anchors. Continue observations of prototype structures.

5. Hydraulic and/or River Modifications. Continue research to determine what river modifications are best to minimize ice-related damage through the use of model studies. Laboratory model construction completed and modeling begun for selected problem locations.

6. Structural and Operational Modifications to Control Ice at Locks. Continue observations of Corps projects' problems with ice at miter gates, mooring bitts, and valves and intakes, in order to recommend design changes for optimum use under winter ice conditions. Continue field tests of most promising techniques. Express operational guidelines for promising techniques in manual form.

7. Improved Ice Passage at Navigation Dams. Work in this area will continue to focus on keeping gates fully operational by reducing ice build-up on them and on controlling machinery. Complete model testing of most promising methods for improved ice passage, and conduct preliminary field trials.

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RIVER ICE MANAGEMENT (CONT)

8. Optimize Use of Waste Heat for River Ice Management. Conclude development of math model to predict extent of open water resulting from use of waste heat. Field validate the math model, and continue compilation of potential heat sources.

9. Travel Frequency Effects on Formation of River Ice. Evaluate results of laboratory model study which identified and quantified the ice conditions resulting from ship traffic during a range of travel frequency, channel, hydraulic, and meteorologic conditions. Continue development of predictive model and continue field tests for scheduling optimum traffic, i.e., convoying.

10. Unconventional Energy Applications. Evaluate the contract study investigating the feasibility of unconventional energy to keep navigation structures ice-free. If indicated, develop field tests of most promising applications.

ACCOMPLISHMENTS: This research effort began in FY 1983. Accomplishments in FY 1986 include:

1. Atlases of 1985-1986 ice conditions on over 900 miles of portions of the Allegheny, Monongahela, Ohio, and Illinois Rivers were prepared based on continuous videotaping from frequent aircraft flights. These atlases, in their second year of coverage, document the range and variation of ice conditions throughout the winter navigation season.

2. Very-large-scale air bubbler installations at Peoria Lock and Dam and Starved Rock Lock and Dam on the Illinois River and Lock and Dam No. 4 on the Monongahela River minimized lock ice entry and greatly eased the problems of winter lock gate operation.

3. New data pertinent to ice conditions and winter navigation were collected at navigation project sites and at a unique midpool location; these data were transmitted via satellite to Corps water control centers to assist winter operations on the major navigable rivers. This is a new real-time use of such data.

COORDINATION: This program is coordinated within the Corps' field offices through a Field Review Group composed of subject area experts. Also, the program is being coordinated with other Federal agencies through the biennial Interagency Research Coordination Conference and a RIM Information Exchange Bulletin is published as a technology coordination vehicle for both the government and private sector. Finally, through periodic government-industry navigation conferences at which presentations are made on the RIM Program, a wide audience is regularly informed of progress.

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. NAVIGATION

b. Locks and Dams
(2) Repair, Evaluation, Maintenance, and Rehabilitation (REMR) Research

SUMMARIZED FINANCIAL DATA

Estimated Total (FY 1984-89) Program Cost	$35,000,000
Allocation for FY 1986	7,870,000
Allocation Requested for FY 1987	7,780,000
Balance to Complete after FY 1987	11,115,000
Decrease of FY 1987 over FY 1986	-90,000

JUSTIFICATION: One of the primary responsibilities of the Corps of Engineers is to repair, evaluate, maintain, and rehabilitate its hydraulic structures. As a result of the 1972 National Dam Inspection Act (Public Law 92-367), greater emphasis has been placed on the evaluation and repair of older hydraulic structures. Experience has shown that repair and rehabilitation of older facilities requires various types of expertise, some of which are different from those required in connection with design and construction of new structures.

The Corps of Engineers now operates and maintains more than 600 hydraulic structures (lock chambers, flood control dams, and powerhouses) at its Civil Works projects. More than half of these hydraulic structures are over 20 years of age, 43 percent are more than 30 years old, and 26 percent were constructed prior to 1940. Nearly half of the approximately 260 lock chambers along inland waterways will reach their 50-year design lives by the turn of the century. During this same period, annual waterborne traffic is expected to increase some 50 percent, according to the National Waterways Study. Further, the Corps of Engineers operates and maintains thousands of miles of roads, breakwaters, jetties, groins, dikes, revetments, levees, and floodwalls in its many Civil Works projects. Many of these projects include the use of electrical and mechanical equipment. This program addresses these problems and permits the Corps and other agencies to respond more efficiently and economically to repair, evaluation, maintenance, and rehabilitation responsibilities.

MAJOR FEATURES OF THE FY 1987 PROGRAM: The REMR Program will enter its fourth year in FY 1987. Emphasis will continue on identifying the latest technology in seven general problem areas, modifying this technology when needed, and providing it to the field in a readily usable form. Several materials, techniques, and systems will be demonstrated in the field.

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REPAIR, EVALUATION, MAINTENANCE, AND REHABILITATION (CONT

1. CONCRETE AND STEEL STRUCTURES. Field demonstrations will be conducted on waterstop replacement techniques, techniques for in-situ repair of deteriorated concrete, surface treatments for cracked concrete, and automation and retrofitting of the instrumentation at Corps projects. A prototype continuous monitoring system for detecting dam movement in three directions with an accuracy of 0.01 will be installed at a Corps project for evaluation. Guidance will be provided on spall repair of wet concrete, performance testing of repair materials and techniques for intake structures and conduits, and methods to reduce navigation locks downtime associated with lock rehabilitation.

2. GEOTECHNICAL. A Grout Monitoring System will be made available for field use in monitoring grout take into weak foundations and guidance will be provided on the real time location of the grout pumped into foundations. An electronic system for the selection of efficient and cost-effective remedial seepage control measures will be provided. Interim guidance will be provided on computerized drilling equipment and techniques, restoration of drainage systems, and innovative remedial levee underseepage control methods. Final guidance on the treatment of liquefaction susceptible foundations located beneath existing structures will also be published.

3. HYDRAULICS. Types of protective materials required for repair and rehabilitation of scoured areas downstream from stilling basins will be identified and guidance on their use will be incorporated into an engineering manual. Guidance will be provided to field personnel on floating debris control systems and present practices for shallow-draft navigation training structure repair and rehabilitation. Models will be constructed of navigation reaches with high accident rates and used to investigate the causes of these accidents and potential rehabilitation schemes to reduce accident rates.

4. COASTAL. The primary concerns in this problem area are the repair, evaluation, maintenance, and rehabilitation of coastal structures, harbors, and coastal channels. A prototype system will be constructed and evaluated for making underwater surveys of coastal structures in hostile wave environments (e.g., immediately following a storm). Guidance of dolos overlays of existing dolos armor for repair of coastal structures will be provided.

5. ELECTRICAL AND MECHANICAL. Field tests will be conducted on new maintenance and repair procedures for cavitation damage of electrical turbine blades. Guidance will be provided on painting of submerged metal surfaces and control of nuisance roosting birds and bird waste at Corps projects. A material selection guide will be provided to assist field personnel in selecting the best material for replacement of broken or worn parts of mechanical equipment.

6. ENVIRONMENTAL IMPACT. This problem area will be concerned with environmental impacts of the recommended REMR techniques developed. Techniques will be evaluated to identify adverse environmental impacts, quantify their magnitudes, and recommend remedial procedures where required. Specifically, the

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potential applications of REMR results, including their effects on the environment and on compliance regulations, will be addressed. In addition, a methodology for minimizing the effects of REMR activities on the environment will be developed.

7. OPERATIONS MANAGEMENT. A uniform evaluation procedure and condition index system for Corps Civil Works structures will be developed. An Operations Management System for REMR activities will be formulated, and demonstrations and pilot tests will be conducted to determine needed modifications and refinement.

ACCOMPLISHMENTS:

1. Field demonstrations were conducted on underwater inspection systems and precast concrete panels as stay-in-place forms for lockwall rehabilitation. Guidance was furnished to the field on new and efficient concrete surface preparation techniques for repair and rehabilitation work. Automated data collection and reduction systems that can be retrofitted to existing concrete structures for more efficient and timely monitoring surveillance were documented for field use. Guidance was furnished on the use of silica fume concrete for repair work, and on the use of tremie concrete and preplaced aggregate for underwater repair of concrete structures.

2. Guidance was provided for identifying levee underseepage problem areas during flood stages and current control methods. Interim user guidelines were provided on improving liquefaction susceptible foundations located beneath existing structures. A data base containing seepage case histories was used to determine the relationships between various seepage control methods used, site characteristics, and results obtained.

3. Research on the problem of scour in high-level emergency spillways resulted in guidance for operational modifications and solutions to assure these spillways operate safely up to their design capacities. The characteristics of navigation reaches with high accident rates were identified so that realistic rehabilitation schemes can be conceived and tested. Guidance on the current practices for lock gate impact barriers and scour detection around navigation training structures was published.

4. The review of field experience and problems in the area of structural damage to coastal structures was completed and characterized. Guidance was furnished on near structure underwater survey techniques and the repair of localized damage to rubble mound coastal structures. A review of the performance of one-layer coverstone breakwaters in the Great Lakes regions was completed.

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REPAIR, EVALUATION, MAINTENANCE, AND REHABILITATION (CONT)

5. A monitoring system for large hydroelectric generators was developed which will provide advanced warning of deteriorating conditions in the generator's winding insulation. Improved guidance was provided on the design, installation, and material selection on navigation lock seals and gate seal heaters, which will result in tougher and lower maintenance seals.

6. Maintenance, repair, and rehabilitation materials and techniques investigated and developed under this research program were evaluated to determine their potential impact on the environment in which they will be used. Guidance was furnished on the Environmental Regulations that pertain to various REMR type activities, and criteria and methods for quantifying environmental benefits due to selected maintenance techniques were developed.

7. Automated procedures for determining maintenance and repair alternatives were developed along with an automated procedure for performing the life cycle costs of these alternatives. A system for storing and retrieving information necessary for a complete operations management system was developed.

8. Six additional REMR Information Exchange Bulletins describing field experiences with new materials, methods, techniques, and equipment used for REMR activities were published. Additional Technical Notes on materials, equipment, methods, and techniques were issued for inclusion in the REMR Notebooks.

COORDINATION: Coordination of this program is being pursued on three fronts. First, expertise relating to REMR problems is being obtained from the technical staffs of various field operating agencies, and loose-leaf technology transfer binders containing a synthesis of existing knowledge will be used by the field operating agencies. Second, the program is also being coordinated with other Federal agencies (U.S. Bureau of Reclamation, Tennessee Valley Authority, and Federal Energy Regulatory Commission) through the biennial Interagency Research Coordination Conferences, annually through REMR meetings, and more frequently through meetings between experts in the particular problem areas. Third, a REMR Information Exchange Bulletin has been established for publication on an irregular basis and for distribution to over 2500 individuals, technical organizations and societies, and local, state, regional, and Federal agencies.

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APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

6. PROTECTION OF NAVIGATION

The budget estimate of $6,276,000 provides for accomplishing the essential work and the administration and enforcement of specific laws, enacted in the interest of the protection of navigation for the removal of sunken vessels and other obstruction (Sec. 19 and 20 , River and Harbor Act, March 3, 1899), the protection, clearing, and straightening of channels of navigable waters not specifically authorized by Congress (Sec. 3, River and Harbor Act, March 2, 1945) and Surveillance of Northern Boundary Waters which include operational activities previously funded under General Investigations, "International Waters Studies," required under provisions of treaties and international agreements for boundary waters of the United States and Canada, and Operation and Maintenance, General, "Survey of North Central Lakes," and the collection of domestic waterborne commerce statistics pertaining to rivers, harbors, and waterways, and compilation and publication of such data in conformance with the River and Harbor Act of September 22, 1922. This latter activity includes: (1) the collection and reporting of necessary statistical data by district offices; (2) the collection, processing, compiling, and annual publication of such statistical data and information on waterborne commerce and vessels moving on inland waterways, the Great Lakes, and through all ocean ports by the Waterborne Commerce Statistics Center of the Corps of Engineers; and (3) the compilation and publication of an annual report by the Waterborne Commerce Statistics Center listing and describing all United States self-propelled and non-self-propelled vessels engaged in commerce, along with the principal trade in which they are engaged and their zone of operation. In addition to funds for collection, compilation, and publication of data on domestic waterborne commerce, the amount requested includes funds to reimburse the Bureau of the Census for costs incurred in furnishing the Chief of Engineers complete port and waterway data on the foreign Waterborne Commerce of the United States. This arrangement was instituted in 1947 to eliminate duplication of collection and compilation of foreign commerce data.

	OBLIGATIONS		
	Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $
(1) Removal of Sunken Vessels and Obstructions	369,700	2,307,000	1,000,000
(2) Protecting, Clearing and Straightening Channels	200	100,000	50,000
(3) Surveillance of Northern Boundary Waters	2,184,200 1/	2,000,000 2/	2,204,000 3/

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(4) Waterborne Commerce Statistics	3,163,900	2,890,000	3,022,000
TOTAL	5,718,000	7,297,000	6,276,000

1/ International Water Studies ($511,600) and Survey of North Central Lakes ($1,672,600)
2/ International Water Studies ($579,000) and Survey of North Central Lakes ($1,421,000)
3/ International Water Studies ($591,000) and Survey of North Central Lakes ($1,613,000)

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Appropriation Title: Operations and Maintenance, General, FY 87

7. National Emergency Preparedness Program

Authorization: E. O. 11490 (cites several acts)

Summarized Financial Data:

Allocation for FY 86	$ 9,900,000
Appropriation Requested for FY 87	13,500,000
Increase in FY 87 Over FY 86	3,600,000

Justification: Essential emergency functions assigned by Executive Order (E.O.) 11490 include development of national plans and preparedness programs to meet civilian and defense needs during national security and major domestic emergencies. The Corps of Engineers responsibility to provide engineering and construction support in response to these national emergencies requires extensive pre-emergency planning and preparedness activities. These planning and preparedness activities ensure an engineering and construction capability that can be rapidly shifted from normal peacetime missions to meet national emergency or mobilization needs. A fully prepared Corps of Engineers enhances the Nation's ability to respond in a crisis.

In addition, E.O. 11490 assigns the Corps of Engineers responsibility for national leadership in developing policy, guidance and procedures for meeting essential military and civilian water and water support resource needs during national emergencies. This responsibility includes coordination of emergency water planning by Federal agencies as well as regional, state, and local planning efforts through appropriate Federal agencies.

Accomplishments: Completed and ongoing activities in support of national emergency preparedness occur in four major program areas; Mobilization Preparedness, Continuity of Government (Continuity of Operations), Emergency Water Planning, and National Emergency Facilities. Types of activities include: analyses and studies to define Corps of Engineers national emergency support requirements; development, review, and updates of necessary plans and guidance documents, training of management and response personnel; exercises to test organization, plans and training; development, operation and maintenance of national emergency facilities; and, program management. Major guidance documents such as USACE Mobilization Operations Planning System and Corps of Engineers Continuity of Operations Planning System are continually being reviewed and updated. Supporting plans, procedures, and analyses are developed, maintained and updated at all levels of the Corps to ensure the ability of the Corps to respond to national emergency requirements.

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Appropriation Title: Operations and Maintenance, General, FY 87 (Continued)

Fiscal Year 1987: The FY 87 program provides continued implementation of the Administration's policy for national emergency and mobilization preparedness as reflected in Executive Order 11490, as amended, and the National Security Decisions Directive number 47, dated 22 July 1982. The requested increase over FY 86 reflects continued implementation of the Emergency Water Planning (EWP) program and implementation of the Emergency Relocation Site Development Plan which had been delayed a year. FY 87 is the second year of a three year plan to implement the EWP program at all Corps districts. Of the funds provided for National Emergency Facilities, $1.8M will be utilized in the operation and maintenance of existing EOC's and their upgrade related to national emergency requirements. Also included in this figure is operation and maintenance of existing permanent and interim emergency relocation sites (ERS). The remaining $1.7M will be utilized to undertake development of three key permanent ERS and continue planning on several others. The Emergency Relocation Site Development Plan has been modified for implementation over a longer period of time resulting in lower annual funding requirements.

The $13,500,000 requested for FY 87 will be used by in-house forces to perform the following activities:

Mobilization Preparedness	$ 4,450,000
Continuity of Government Preparedness	2,630,000
Emergency Water Planning	2,920,000
National Emergency Facilities	3,500,000
	$13,500,000

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Appropriation Title: Flood Control and Coastal Emergencies, FY 1987

Disaster Preparedness/Emergency Response

Summarized Financial Data:

Appropriation Requested for FY 1987	$25,000,000
Allocation for FY 1986	$25,000,000

Justification: The Corps responsibility for emergency/disaster response requires that a fully functional engineering/construction/emergency operations response capability be maintained. This response can be under Corps authorities, such as PL 84-99, Flood Control and Coastal Emergencies, or in support of other agencies, particularly FEMA under PL 93-288 and EO 12148. Response activities under the Corps PL 84-99 authority include the following: emergency operations (flood fight and rescue); emergency repair and restoration of flood control works which are threatened, damaged, or destroyed by flood; emergency protection of existing Federal hurricane and shore protection works; the repair or restoration of Federal hurricane or shore protective structures damaged or destroyed by wind, wave or water action of other than ordinary nature; preventive work performed prior to flooding when conditions pose a flood threat to life or property; providing emergency supplies of clean drinking water to any locality confronted with a source of contaminated drinking water causing or likely to cause a substantial threat to public health and welfare; and provision of water supplies to drought-distressed areas by well drilling on a reimbursable basis or transportation of water at Federal cost. In support of FEMA's disaster response and recovery activities, Corps mission assignments have included: emergency debris removal; preliminary damage assessments; detailed damage survey reports; temporary housing; emergency snow removal; contracting and construction management; and other support which calls upon the Corps engineering, contracting and construction expertise. The funding for unscheduled response activities under PL 84-99 would meet the requirements of a minimum year and is equivalent to about forty percent of the average annual requirements for these activities. This would preclude adverse impacts on other appropriations from a level of emergency responses that could be expected.

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Accomplishments: Planning and preparedness activities for natural disaster response are funded under PL 84-99 authority in the category "Disaster Preparedness." The purpose of these activities is to ensure an engineering organization capable of responding to both natural and man-made disasters. Major efforts include: the review and updating of response plans to ensure viability; training personnel to ensure their capability to respond in adverse circumstances; procurement and prepositioning of critical equipment and supplies which would likely not be available during initial stages of a response: periodic exercises to test and evaluate plans, personnel and training; and the overall management of the response program to ensure a workable, coordinated effort is undertaken in a timely manner.

Fiscal Year 1987: The $25,000,000 requested for FY 1987 will be used by in-house forces to perform the following activities:

Preparedness Program	
Corps Statutory Authorities	$ 6,420,000
Activities in Support of Others	$ 1,290,000
Facilities	$ 1,560,000
Emergency Response (Advance Measures, Flood Fight, Rehabilitation)	$15,730,000

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JUSTIFICATION OF ESTIMATES FOR CIVIL FUNCTIONS ACTIVITIES
Department of the Army, Fiscal Year 1987
Corps of Engineers

APPROPRIATION TITLE: General Expenses

	FY 1986 Allocation 1/	FY 1987 Request	Change
1. Executive Direction and Management			
a. Office, Chief of Engineers	$42,250,000	$45,000,000	$2,750,000
b. Division Offices	53,170,000	57,610,000	4,440,000
2. Board of Engineers for Rivers and Harbors	2,700,000	2,850,000	150,000
3. Coastal Engineering Research Board	230,000	240,000	10,000
4. Support Centers			
a. Engineer Automation Support Activity	4,100,000	4,400,000	300,000
b. Water Resources Support Center	4,550,000	4,900,000	350,000
TOTAL:	$107,000,000	$115,000,000	$8,000,000

1/ Does not reflect reductions required by the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177) and does not include a supplemental for restoration of the Fiscal Year 1986 pay reduction.

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APPROPRIATION TITLE: General Expenses

1. Executive Direction and Management

a. Office, Chief of Engineers (OCE)

FY 1986 Allocation	FY 1987 Request
$42,250,000	$45,000,000

The Chief of Engineers is responsible for carrying out a comprehensive Civil Works Program in accordance with the directives of the Congress. Implementation of these directives is decentralized throughout the Corps of Engineers in 36 districts and 11 division offices and several separate activities. The Office, Chief of Engineers assists these offices by providing direction, management, coordination, and policy guidance. In order to provide adequate assistance, this office requires services of sufficient kinds and numbers of highly skilled specialists. More effective methods for determining requirements and better utilization of resources is under review and analysis, and will be utilized in the future to accelerate the accomplishment of Corps of Engineers goals and objectives.

The amount requested for the Office, Chief of Engineers for FY 1987 is $45,000,000, which is a increase of $2,750,000 above the FY 1986 allocation of $42,250,000. The net change will be:

$1,600,000	-	restoration of the deleted FY 1986 pay reduction, annual within grade salary increases, and Civil Works contribution to the military retirement system.
240,000	-	increased use of automation and time sharing support.
550,000	-	increased rent, communications and utilities costs.
170,000	-	increased supplies and equipment replacement costs.
190,000	-	increased other contractual services.
$2,750,000		

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APPROPRIATION TITLE: General Expenses

1. Executive Direction and Management (Continued)

a. Office, Chief of Engineers (Continued)

Breakdown of the total $45,000,000 requested for the Office, Chief of Engineers, includes $30,770,000 for personnel compensation and benefits for civilian and military personnel, and $14,230,000 for other costs. Other costs include:

$ 2,120,000	-	travel and transportation of persons and things, including Government owned vehicles and aircraft.
2,600,000	-	communications, utilities, and other rent.
2,000,000	-	printing and reproduction.
6,410,000	-	other services:
	2,500,000	- ADP costs.
	1,100,000	- office equipment repair and maintenance costs, Pulaski Building.
	550,000	- Executive Development and Management training.
	350,000	- tuition for schools and conferences.
	300,000	- fiscal support to OCE.
	70,000	- Permanent International Association of Navigation Congresses.
	110,000	- indicia mail.
	100,000	- defense printing service.
	550,000	- contractual stenographic services for Chief Counsel's office, Industrial Hygiene Survey, Medical Advisors for Safety Office, support of Technical Information Center, support of Environmental Advisory Board, Federal Women's Program, and Environmental Quality Support.
	780,000	- administrative support.
1,100,000	-	supplies and equipment replacement costs.
$14,230,000		

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APPROPRIATION TITLE: General Expenses

1. Executive Direction and Management (Continued)

b. Division Offices

FY 1986 Allocation	FY 1987 Request
$53,170,000	$57,610,000

Division offices provide the managerial and technical direction required by the Chief of Engineers for proper supervision of subordinate district offices in carrying out the Civil Works Program. The Executive Direction and Management activities are decentralized to 11 division offices throughout the United States. Based on a continuing analysis of the workload and utilization of personnel in division offices, the requirement for the operation of 11 division offices supported from General Expenses funds in FY 1987 is $57,610,000. This amount is $4,440,000 above the FY 1986 allocation of $53,170,000. The net change will be:

$3,167,000	-	restoration of the deleted FY 1986 pay reduction, annual within grade salary increases, and Civil Works contribution to the military retirement system.
592,000	-	increased rent, communications and utilities costs.
145,000	-	increased supplies, equipment, and printing costs.
70,000	-	increased travel and transportation of things costs.
466,000	-	increased other services:
	31,000	- administrative and fiscal support by districts.
	215,000	- ADP costs.
	130,000	- maintenance costs.
	90,000	- miscellaneous contract costs.
$4,440,000		

Breakdown of the total $57,610,000 requested for the 11 division offices includes $44,125,000 for personnel compensation and benefits for civilian and military personnel, and $13,485,000 for other costs.

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APPROPRIATION TITLE: General Expenses

1. Executive Direction and Management (Continued)

b. Division Offices (Continued)

Other costs include:

$ 5,688,000	-	rent, communications, and utilities.
2,677,000	-	travel and transportation of persons and things.
773,000	-	supplies, equipment, and printing.
4,347,000	-	other services:
2,990,000	-	ADP costs.
665,000	-	administrative and fiscal support by districts.
310,000	-	training and related costs.
130,000	-	depreciation and insurance.
110,000	-	tool and equipment aquisitions.
35,000	-	miscellaneous contract costs.
27,000	-	graphics costs.
79,000	-	maintenance costs.
$13,485,000		

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APPROPRIATION TITLE: General Expenses

2. Board of Engineers for Rivers and Harbors (BERH)

FY 1986 Allocation	FY 1987 Request
$2,700,000	$2,850,000

The Board of Engineers for Rivers and Harbors (BERH) was authorized by Section 3 of the River and Harbor Act, approved 13 June 1902. The Act provides for the organization, in the Office of the Chief of Engineers, a detail of five (increased to 7 by the 1913 Act) engineer officers from the Corps of Engineers. The Act directs that all reports on authorized surveys of river and harbor projects be referred to the Board for consideration and recommendation prior to submission by the Chief of Engineers of related reports with recommendations to Congress. This directive was subsequently amended to apply to flood control reports. Section 6 of River and Harbor Act, approved 3 March 1909, provided that the Board consider, approve and recommend to the Chief of Engineers plans for modification and reconstruction of any lock, canal, canalized river or other work of benefit to navigation. Public Law 88-172, 7 November 1963, abolished the Beach Erosion Board and added the additional function of review of beach erosion control reports to the Board's functions.

The amount requested for BERH for FY 1987 is $2,850,000, which is $150,000 more than the FY 1986 allocation of $2,700,000. The net changes will be:

$120,000	- restoration of the deleted FY 1986 pay reduction, annual within grade salary increases, and Civil Works contribution to the military retirement system.
25,000	- increased rent, communications and utilities costs.
5,000	- increased supplies, equipment and contract service costs.
$150,000	

Breakdown of the total $2,850,000 requested for BERH includes $2,260,000 for personnel compensation and benefits for civilian and military personnel and $590,000 for other costs. Other costs include:

$ 1,000	- travel and transportation of things.
398,000	- rent, communications and utilities.
50,000	- supplies, equipment and printing.
61,000	- other services:
	10,000 - ADP.
	28,000 - training and related costs.
	7,000 - fiscal support.
	16,000 - miscellaneous contract services.
$590,000	

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APPROPRIATION TITLE: General Expenses

3. Coastal Engineering Research Board (CERB)

FY 1986 Allocation	FY 19 Request
$230,000	$240,000

Public Law 88-172, 7 November 1963, established the U.S. Army Coastal Engineering Research Center (CERC), abolished the Beach Erosion Board organized under authority of Section 2, 1930 River and Harbor Act, as amended (33 USC 426), and transferred its functions, other than review of investigation reports on erosion and shore protection for coasts and lake shores, to CERC. The report review function was transferred to the Board of Engineers for Rivers and Harbors, subjecting reports on erosion protection to the same review procedures pertaining to other reports on water resources management. The authorizing act also provided that the CERC, as the principal research and development agency of the Corps in the coastal engineering field, conduct its work under the guidance and advice of a Coastal Engineering Research Board (CERB), to be constituted by the Chief of Engineers in the same manner as the former Beach Erosion Board. CERC became an integral component of the U.S. Army Engineer Waterways Experiment Station (WES) in 1983. CERB is an advisory board to the Chief of Engineers, who appoints its seven members: four senior Corps of Engineers officers-- normally the Director of Civil Works, who acts as President of the Board, and three Division Engineers of coastal and Great Lakes Divisions; and three prominent civilians outstanding in the coastal engineering field. CERB meets semiannually, or at the call of the President of the Board, to consider the Corps' coastal engineering research program. It provides broad policy guidance, reviews plans and fund requirements for conducting coastal engineering research and development, recommends research project priorities, and performs other duties assigned by the Chief of Engineers.

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APPROPRIATION TITLE: General Expenses

4. Support Centers

a. Engineer Automation Support Activity (EASA)

FY 1986 Allocation	FY 1987 Request
$4,100,000	$4,400,000

The US Army Engineer Automation Support Activity (EASA) provides a central service for ADP systems design, computer programming, collection and compilation of statistical data, and production of reports for the Office of the Chief of Engineers, including the Corps of Engineers Management Information System (COEMIS); coordinates, cooperates, and participates with OCE staff elements and field activities concerning ADP applications; and furnishes ADP technical assistance as requested or required.

The amount requested for the EASA for FY 1987 is $4,400,000, which is $300,000 more than the allocation of $4,100,000 for FY 1986. The net change will be:

$62,000	-	restoration of the deleted FY 1986 pay reduction and annual within grade salary increases.
14,000	-	increased supplies, equipment, and printing.
224,000	-	increased other services:
	187,000	- ADP costs (hardware rental).
	37,000	- equipment maintenance.
$300,000		

Breakdown of the total $4,400,000 requested for EASA includes $1,435,000 for personnel compensation and benefits, and $2,965,000 for other costs. Other costs include:

$ 44,000	-	travel and transportation of persons and things.
100,000	-	rent, communications, and utilities.
110,000	-	supplies, equipment, and printing.
2,711,000	-	other services:
	1,800,000	- ADP costs (hardware rental).
	375,000	- equipment manintenance.
	402,000	- miscellaneous contract services.
	34,000	- training and related costs.
	100,000	- plant increment and insurance costs.
$2,965,000		

APPROPRIATION TITLE: General Expenses

4. Support Centers (Continued)

b. Water Resources Support Center (WRSC)

FY 1986 Allocation	FY 1987 Request
$4,550,000	$4,900,000

The Water Resources Support Center (WRSC) was established in FY 1979 to perform a variety of water management functions such as conducting and managing national studies, managing the Corps' dredging program, providing research to the Corps on special studies, and lending technical and data management support to other Corps offices in matters dealing with water resource management. The studies undertaken at the Center are providing the Corps with information to assess and analyze emerging water resource issues and to plan for future water resources development. In addition, WRSC manages, for the Chief of Engineers, the United States participation in the Permanent International Association of Navigation Congresses (PIANC).

The amount requested for the WRSC for FY 1987 is $4,900,000, which is $350,000 more than the FY 1986 allocation of $4,550,000. The net change will be:

$ 281,000	- restoration of the deleted FY 1986 pay reduction, within grade salary increases, and Civil Works contribution to the military retirement system.
18,000	- increased travel and transportation costs.
29,000	- increased rent, communications and utilities costs.
7,000	- increased printing, supplies, and equipment.
15,000	- increased other services
$350,000	

Breakdown of the total $4,900,000 request for WRSC includes $3,182,000 for personnel compensation and benefits for civilian and military personnel, and $1,718,000 for other costs. Other costs include:

$ 174,000	-	travel and transportation of persons and things.
617,000	-	rent, utilities, and communications.
208,000	-	supplies, equipment, and printing.
719,000	-	other services:
	225,000	- Hydrologic Engineering Center program maintenance.
	34,000	- training.
	35,000	- machine maintenance.
	102,000	- fiscal and administrative support.
	290,000	- ADP costs.
	33,000	- miscellaneous contract services.
$1,718,000		

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APPROPRIATION TITLE: REVOLVING FUND

1. Explanation of Revolving Fund. The Revolving Fund, which was established by Congress in 1953 (Public Law 153, 83rd Congress-67 Stat. 199), replaced the Plant Allotment Account authorized by the Secretary of War, on 13 December 1934, which had in turn replaced the Plant Program-Appropriation Basis which was in use prior to 1934. The two systems, prior to the establishment of the Revolving Fund, did not prove to be successful, because the accounting procedures necessitated by the systems were cumbersome and resulted in a distorted picture of costs when plant was transferred from one appropriation to another.

Essentially, PL 153 provided that the Revolving Fund assume the total capital value of $127.9 million in 1953, consisting of the unexpended cash balance ($25.3 million) and the net value ($102.6 million) of the assets and liabilities of the plant accounts; and to perform all future services, as a separate entity, within its own resources. The Revolving Fund has proven to be an effective means of providing equipment and materials needed on more than one project. Some advantages of the system are: (1) Simplifies funding and accounting procedures; (2) Provides a means for plant rental which considers plant replacement costs; (3) Eliminates distorted project costs when plant is not used entirely on a single project throughout its economic life; and (4) Permits plant to be available on a timely basis to meet workload requirements.

The concept of the Revolving Fund is for it to operate within its own resources, rather than from annual appropriations. The Fund owns all the land, structures, dredges, other floating plant, aircraft, fixed and mobile land plant, tools, office furniture, special equipment, and computers, that serve two or more Civil Works projects. In order for the Revolving Fund to acquire and replace the above items, it is necessary that the user project or appropriation be charged a fee for the actual time the equipment is used. This fee consists of operating and fixed costs. The operating costs are reimbursed to the Revolving Fund without any surcharge. The fixed or capitalized costs include depreciation, based on the straight-line method and a plant replacement increment factor to provide for future increased costs of replacement items due to inflation. Two additional sources of income to the Revolving Fund are the sale of surplus items and, when planned expenditures exceed the income producing capability of the Fund, direct appropriations. For FY 1987, new budget authority in the amount of $12,000,000 is requested, including $10,000,000 for construction of a replacement dustpan dredge and $2,000,000 to continue implementation of the Corps of Engineers Automation Plan (CEAP).

When the Revolving Fund was established, Congress authorized a capital limitation or ceiling of $140.0 million for the Fund. The capital value or corpus is the total assets, less liabilities and reserves. The $140.0 million ceiling was adequate until 1965, when increased workload and inflation required that the Corps of Engineers request annual increases in the corpus ceiling. These requests were generally granted. The limitations on the corpus ceiling value limited the income that could be generated from plant rentals which, in turn, adversely affected the overall management of the Fund. Therefore, the Corps recommended that an annual capital expenditure ceiling be substituted for the corpus ceiling. Congress granted the request in

FY 79. Starting with FY 1985 expenditure ceilings were replaced with expenditure estimates. For FY 87, the capital expenditure is estimated at $83.0 million.

2. The Revolving Fund is operated in the Divisions, Districts, and separate Field Offices, the Waterways Experiment Station, and the Cold Regions Research and Engineering Laboratory. The fund incurs the expenses of acquisition, rehabilitation, operation, and maintenance of multiple-use structures, such as warehouses, shops, garages, and laboratories; the expenses of acquisition, rehabilitation, operation, and maintenance of general-purpose plant, such as dredges, tugs, launches, trucks, cranes, bulldozers, and other construction equipment; and the general administrative expenses of District offices.

3. FY 1986 and FY 1987 (Items costing $700,000 or more)

a. Land and Structures:

(1) Warehouse Replacement (Continuing): The existing Bldg. No. 1 (commonly called The Omaha District Warehouse), located at the Omaha District Heavy Equipment Maintenance Base, is a wooden structure that was constructed in 1940. The current structure contains approximately 25,000 square feet, with approximately 10,000 square feet of wooden deck on a concrete foundation, and the balance on a concrete slab deck. The current structure is beyond economical repair, as measured from structural soundness, energy efficiency, safety, security from fire hazards, rodents, and termites. This structure is used as a storage center because of the shortage of physical space in Federal buildings, and the increased costs of space in the downtown areas. Currently, Bldg. 1 is used for the storage of historical data and records (surveys, seismic, water quality, payroll), which would be impossible to recover in the event of loss, as well as for the storage and use of costly state-of-the-art electronic equipment. Construction will consist of a prefabricated structural steel type building with a concrete slab flooring of approximately 39,000 square feet. Estimated Total Cost: $1,600,000. Through FY 1986: $1,200,000 for design and to initiate construction. FY 1987: $400,000 for completion of construction.

(2) Renovation to Alaska District Office Building (Continuing): The Alaska District office facility is located on Elmendorf Air Force Base. The building, a 3-story wood frame structure with a floor area of 68,400 square feet, was built in 1946 by the Air Force and has been occupied by the Corps continuously since. Ownership of the building was transferred to the Corps in 1979, and the building was re-sided and insulated backboard installed. The age of the building and the minimal past maintenance efforts necessitate substantial repairs to upgrade the building to meet existing electrical, safety, and energy conservation codes. Building 21-700 is basically a functional office facility at a very suitable location with respect to the Alaska Air Command and 172nd Infantry Brigade offices, the two principal military commands served by the Alaska District. The district also owns a laboratory, warehouse, shop building, and

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equipment storage yards in the immediate vicinity. A three year program of renovation is considered necessary to avoid interruption of ongoing activities, and to minimize impact on available resources. Total estimated cost is $5,200,000. Through FY 1986: $4,000,000 for continuation of renovations. FY 1987: $1,200,000 for completion of renovations.

(3) Erosion Protection System - Savannah District (New): The river bank on the north side of the Savannah River has eroded and flanked the bulkhead at the Engineer Depot. The bulkhead has been undermined and has deteriorated to the point where it can no longer be maintained or repaired. The yard behind the bulkhead is being severely eroded from waves and bank suction caused by ocean going ships navigating the channel. The requested erosion protection system will involve removal of the existing deteriorated pilings and bulkhead, dressing of the slope, and the placement of a "fabriform" protection. The erosion protection system will be constructed along the new harbor line for the proposed widening project. It is essential that a new erosion protection system be constructed to prevent the existing bulkhead and debris from falling into the river and becoming a hazard to navigation and to prevent further damage to existing structures and facilities at the depot. Total estimated cost: $1,100,000. Through FY 1986: $160,000 for engineering and design. FY 1987: $940,000 for construction.

(4) Additions and Betterments - Coastal Engineering Research Center Headquarters Building (New): The Coastal Engineering Research Center (CERC) is headquartered in a 9,900 square foot facility which is inadequate for present operational requirements. Only a small percentage of the CERC staff can be located in this facility. The remainder are distributed among 14 other buildings. This creates inefficiences because of the added time it takes to coordinate actions, supervise suboruinates, or obtain administrative/clerical support. A small addition of 9300 square feet, presently under construction, will only partially alleviate this problem. A major addition of 15,500 square feet is required. Total Estimated Cost: $900,000. Through FY 1986: $50,000 to initiate design. FY 1987: $50,000 to complete design. FY 1988: $400,000 to initiate construction. FY 1989: $400,000 to complete construction.

(5) Riprap Test Facility - Waterways Experiment Station(Continuing): Riprap, consisting of crushed and graded stone, is the most common material used to protect channel boundaries. Recent investigations with available laboratory facilities have indicated the severe limitations involved in simulating comparable and appropriate conditions experienced in the field (fully developed turbulent flow, drag and lift forces, bend radius, flow depth to particular diameter, channel slope, and gradation or composition of riprap blankets). A larger facility than that presently available (25cfs) is required to permit systematic testing of more representative riprap models. The proposed facility is a test channel complete with sump, pumps, and mechanical equipment required for recirculating discharges up to 200 cfs through a 4 foot deep, 12 foot wide and 500 foot long channel. No such facility is presently available or planned and the proposed riprap test facility would result in a substantial advance in knowledge and U.S. leadership in the field of quantitative investigation and description of hydraulic phenomena. One example of the potential savings which could

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result from improved riprap guidance is reduced annual maintenance of flood channels. Recent studies revealed that a total of 142,000 bank-miles, about 2% of the 7 million bank-miles in the nation, is subject to serious erosion causing damage estimated at $250 million annually (1981 dollars). Channels in Corps of Engineers projects represent about 10% of the national total. Total estimated cost $1,400,000: Through FY 1986: $750,000 for design and to initiate construction. FY 1987: $650,000 to complete construction.

(6) Automatic Data Processing (ADP) Center (Continuing): The proposed 43,200 square foot facility at the Waterways Experiment Station is needed to house the Automatic Data Processing Equipment (ADPE) and support personnel to serve the Lower Mississippi Valley Division (LMVD) and the WES research laboratories of the Corps of Engineers. The facility will provide security for the ADPE, environmental control of the equipment area, noise reduction, power reliability, office space, and meet conservation requirements. It will also relieve the critical space shortages of other elements at WES especially the Office of the Comptroller and the Technical Information Center (TIC). In addition, the latter, now fragmented among several locations could be consolidated in the space vacated by the ADP Center. The Engineer Inspector General has been critical of the adequacy of TIC space and its dispersal of facilities. The proposed facility will also be able to accommodate any future ADPE planned for WES by OCE and/or the HQDA for installation in the next decade. Total estimated cost: $7,900,000. Through FY 1986: $375,000 for design and award of contract for construction. FY 1987: $1,250,000 for initiation of construction. FY 1988: $2,500,000 for continuing construction, with $3,775,000 required in future years for completion of construction.

(7) Hydraulics Lab Building Addition - Waterways Experiment Station (Continuing): The Hydraulic Laboratory headquarters are located in a 12,500 square foot building (bldg 3200) which was constructed in 1948 and expanded in 1970, 1974, and 1976. It is in need of extensive repair, renovation, and further expansion. The roof and exterior walls leak in the original portion of the building, causing excessive maintenance requirements for the ceiling and interior walls. Because of the lack of insulation, single pane windows, obsolete HVAC equipment, etc., the building is very energy inefficient. Bldg 3200 is occupied primarily by management, first-line supervisory, clerical, and administrative staff. A few high-level non-supervisory engineers/scientists also have offices in the building. Present occupancy totals 42. The remainder of the Hydraulics Laboratory staff are housed in one small wood-frame office building, two double-wide trailers, three small permanent office complexes located inside model shelters, and about 45 portable buildings, scattered throughout WES. The computers used at remote sites are also located in building 3200. A major expansion of building 3200 is required in order to centralize personnel and operations and to vacate many of the existing poorly constructed, energy-inefficient office buildings. It will also permit conversion of 10-15 portable buildings from engineer offices to work areas for technicians, model control rooms, instrument rooms, model data storage areas, etc. The requested 21,000 square feet addition will consist of a brick cased steel structure designed for energy efficiency. The expansion will increase the personnel capacity of bldg 3200 from 42 to about 120. Total estimated cost: $3,275,000.

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Through FY 1986: $1,060,000 to complete design and initiate construction. FY 1987: $2,215,000 to complete construction.

(8) Waterways Experiment Station: Model Shelter Structures (Continuing): Prefabricated steel-frame steel-panel structures, constructed over hydraulic model facilities, are required to eliminate the effects of weather conditions on the accuracy and reliability of hydraulic models. The current direction and velocity, water level, surface slope, salinity, dispersions, temperature, wave height and direction, wave-induced currents and mass transport, and harbor oscillations reproduced in hydraulic model test facilities are extremely sensitive to the physical elements, especially wind, rain, and icing conditions. Shelter structures eliminate costly delays in the testing schedules caused by adverse natural conditions and the need to repeat partially completed tests due to damage to the bed and slope conditions of the models caused by rains and winds which occur while tests are in progress. Presently, WES is working on preliminary plans for several proposed models, including 4 models of Red River Locks & Dams, Louisiana; Oliver Lock & Dam, Alabama; Maryland Lock & Dam, Indiana and Kentucky; Cumberland River, Tennessee; and 4 models of the Han River, Korea. Several additional model studies are in the preliminary planning stage for future construction at WES, and some of them probably will require new model shelters over the next several years. At this time it is not known which models will be authorized for construction in FY 86-87 or if space will be available in existing shelters. One or two model shelters will be built or extended each year. Depending on the model and shelter size, two models can be placed within the same shelter. Through FY 1986: $4,600,000. FY 1987: $600,000.

(9) Walla Walla District Office Building Replacement(Continuing): A new headquarters building for the Walla Walla District is required to replace the existing 44 year old structure. GSA found that structure in substantial violation of safety and structural standards during inspections in February and March 1985. GSA estimated the cost to correct these deficiencies at $4.5 to $5.0 million. It would be uneconomical to make such costly repairs to a structure with a useful life of only 15 years remaining. In addition the facility is very inefficient to operate and maintain, since utility costs exceed 3 times the costs for a modern structure of comparable size. PL 99-88, dated August 15, 1985 gave the Secretary of the Army the authority to acquire land in Walla Walla and construct a building not to exceed $12,000,000 plus reasonable interest by lease or installment payments over 25 years. A cost comparison of Corps construction vs acquisition via long term (25 years) lease purchase establishes that Corps construction would realize an annual savings of $325,000 or $8,122,000 over the 25 year lease-purchase period. The design and construction schedule would be the same under either option. Cost and schedule comparisons were based on a 90,000 sq. ft. $10,000,000 headquarters building for 430 employees and do not include land costs, or engineering and design and supervision and administration costs (currently estimated at $1,163,300). Total estimated cost including design, land acquisition, construction, and furniture is $12,900,000. Through FY 1986: $1,000,000 for land acquisition and completion of design. FY 1987: $7,000,000 to initiate construction. FY 1988: $4,900,000 for completion of construction.

b. Dredges:

(1) Replacement for Dustpan Dredge (Continuing): PL 95-269 directed the Secretary of the Army to reduce the Federal Dredging Fleet to a minimum level, but capable of fulfilling the requisites of emergency and national defense. PL 95-269 also indicates that the minimum federally owned fleet shall be maintained to technologically modern and efficient standards including replacements as necessary. This emergency and national defense mission covers not only domestic, but overseas requirements.

It has been determined that the Corps minimum fleet of non-hopper dredges will include six vessels, three of which will be dustpan dredges so that adequate navigable channels can be maintained on the Mississippi River. Dustpan type dredges were designed for and are the most efficient type of plant for removing shoals in alluvial rivers of major magnitude such as the Mississippi River. Over an extended period of time the Corps of Engineers has evaluated the effectiveness of other types of dredging plant to meet these requirements and find that they fall short of the dustpan dredges in terms of mobility and production. The mode of operation of the dustpan dredge is entirely different from that of a cutterhead dredge. In the cutterhead dredge operation the swinging arc process creates a roll or berm downdrift of the cutterhead reducing available flotation depths until the entire length of the crossing or shoal is spanned. These crossings can range in length from 2,000 to 9,000 feet and therefore, navigation traffic is impeded or stopped during the extended time the cutterhead dredge takes to complete the crossing. In addition to impeding navigation through creation of the berm, traffic is also impeded because the cutterhead dredge operates from fixed spuds whereas the self-propelled dustpan dredge operates from anchors and cables which allow it to move in and out of the channel quickly.

Dustpan dredges are essential to maintain navigable channels on the Mississippi River. That portion of the River between St. Louis and New Orleans serves as a major and vital artery for inland navigation. Much of the Nation's commerce is moved on this waterway. The consequences of closing the River to navigation would be catastrophic to many segments of the economy. The Corps of Engineers has three operational dustpan dredges, one each in St. Louis, Memphis, and Vicksburg. The ages of these steam-powered vessels vary from 49 to 51 years. Steam power has not been utilized in new dredges for more than 30 years. The Corps dustpan dredges are quite old and therefore, we are concerned over their ability to provide efficient and reliable service. Vessels of this age are difficult and costly to maintain and require extensive annual repairs, which limit their availability to respond to dredging requirements. As machinery trends change, such as the use of diesel instead of steam, replacement parts become scarce and have to be custom-made, since they are no longer available from manufacturing firms. Corrosion and fatigue of metal, which are common in older dredges, result in requirements for major rehabilitation, including the replacement of hull plating and scantlings, propulsion and pumping engines, and electrical and piping systems. Steam powered dredges also have the disadvantages of requiring considerably more operation and part work manpower than diesel powered dredges. It has become very difficult to recruit and retain personnel skilled and licensed in steam power operation. The modification or rehabilitation of obsolete dredges is expensive and provides only limited improvements in efficiency.

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The single industry dustpan dredge in the United States is under a 12-month contract arrangement with the Corps which provides the widest latitude for the use and mobility of the equipment. In order to assure that the dredging requirements of the Mississippi River can be properly addressed, arrangements will be made for the continued optimal use of this industry dredge.

Considering the age of the existing Corps of Engineers dustpan dredges, it is considered imperative that design and construction of the first dustpan replacement be accomplished as soon as possible. Through an extensive overhaul and repair program, the Corps of Engineers plans to keep the existing two Corps minimum fleet dustpans in operating condition during the period required for an orderly replacement program.

Estimated replacement cost: $40,900,000. Through FY 1986: $2,200,000 for completion of design. FY 1987: $10,000,000 to initiate construction. FY 1988: $20,000,000 to continue construction with $8,700,000 required in future years to complete construction.

(2) Sidecaster Dredge Replacement - Wilmington District (Continuing): PL 95-269 directed the Secretary of the Army to reduce the Federal Dredging Fleet to a minimum level, but capable of fulfilling the requisites of emergency and National defense. It has been determined the minimum fleet of non-hopper dredges will include six vessels, two of which will be sidecaster dredges.

Sidecaster dredges have been used successfully in the Carolina Coastal areas since 1965. These vessels are highly efficient in the construction and maintenance of channels of small dimensions through the shifting sand shoals of the middle Atlantic inlets. Dredging in unprotected waters, subject to constant change, rapid and breaking waves, requires dredging plant of unique design and capabilities. The two existing sidecasters were developed using World War II Navy vessels. Their age, plus the reduced number of sidecasters in the minimum fleet, make it imperative that a replacement dredge be constructed in the near term. Total estimated cost: $10,700,000. Through FY 1986: $150,000 to initiate design. FY 1987: $350,000 to continue design. FY 1988: $4,200,000 to complete design and to initiate construction, with $6,000,000 in future years to complete construction.

c. Other Floating Plant:

(1) Replacement Tender (New): A replacement for the tender FIFE in the Vicksburg District is requested. The FIFE was built in 1944, and substantial annual repairs and maintenance are necessary to keep the vessel operational. The FIFE tends the Vicksburg District Mat Sinking Unit which includes the short distance towing of Deck Cargo Barges loaded with concrete mat to the Mat Sinking Barge, and the towing of empty barges from the Mat Sinking Barge. In addition, the FIFE tows the Labor Barge and Quarter Boat, often during demanding conditions of weather and river traffic. This operation requires a dependable vessel of safe, modern, fuel efficient design and construction. Total Estimated Cost: $1,400,000. Through FY 1986: $25,000 to initiate design. FY 1987: $125,000 to complete design and initiate construction. FY 1988: $1,250,000 to complete construction.

(2) Crane Barge (New): A 125 ton floating crane is needed to replace two smaller cranes, the UPATOI and the TALLAWAMPE, currently operational in the Mobile District. These cranes were built in 1909 and 1938, respectively, and are beyond economic repair. Furthermore neither meets current operational requirements. For these reasons, both have played noncritical standby and supplemental roles in the District's lock and channel maintenance program in recent years. However, the opening of the Tennessee Tombigbee Waterway has almost doubled the District's lock and channel maintenance requirements, and, as a result, a fully operational derrick boat is now required to support repairs to locks and other structures, to perform minor dredging, to place rip-rap, and so forth. Total Estimated Cost: $4,200,000. Through FY 1986: $60,000 to initiate design. FY 1987: $200,000 to continue design. FY 1988: $3,940,000 to complete design and construction.

(3) Offshore Surveyboat (Continuing): A 65-foot survey vessel, capable of operating in the Chesapeake Bay and its tributaries and offshore on the Virginia Coast, is needed by the Norfolk District as a replacement for present surveyboat ADAMS, which was built in 1963 and is rapidly approaching the end of its economic life. It is essential that a new vessel be placed into service before the ADAMS deteriorates to a point where it is unable to perform its functions safely and effectively. The vessel operates 250 days a year in order to perform surveys on the deep draft channels of Hampton Roads, James River, and Chesapeake Bay. Due to the long distances to work sites and its slow speed of 8 to 10 knots, many man-hours of work are lost to travel time. Further, the potential for breakdown combined with its low speed, jeopardizes the safety of personnel, especially when encountering fast-moving severe storms. Total estimated cost: $1,700,000. FY 1987: $200,000 to initiate design. FY 1988: 1,500,000 to complete design and construction.

(4) Survey Vessel (Continuing): Procurement of a 65 foot new survey vessel is required to replace the 45 foot survey boats CARSON II and BACON II in Savannah District. Because of their age both existing boats, especially the CARSON II, frequently require repair of damage caused by heavy pounding of waves. In addition, at 45 feet, both boats are too short for present use and they employ survey equipment which is obsolete and requires substantial annual maintenance. The proposed replacement will be fitted to receive automated, computerized hydrographic survey equipment including depth sounder, and will support hydrographic activities for commercial and military installations in Savannah, Brunswick, and Kings Bay Harbors. The new vessel will be designed by the WRSC Marine Design Division after a standard design already in use by the Corps. Total Estimated Cost: $1,700,000. Through FY 1986: $1,600,000 for design and to initiate construction. FY 1987: $100,000 to complete construction.

(5) Replacement Tow Boat - Rock Island District (Continuing): A replacement is needed for the towboat ANDREWS. The ANDREWS was built in 1954 for use on the Lower Mississippi River, Gulf Coast, and Intercoastal Waterway. The vessel was transferred to the Rock Island District in 1980. The vessel has been used since that time to push deck cargo barges in support of the rock placement and channel maintenance activities in the Rock Island District. It has become increasingly uneconomical to continue operating this boat now due to its age and size. Its direct drive transmission also increases operating time needed to perform its mission

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on the upper Mississippi River. It is necessary to have a full-time mechanic on board because the direct reversing engine must be shut off and restarted when switched from forward to reverse directions. A smaller, more fuel efficient boat with a minimum 1600 horsepower engine is required. The vessel will be used througnout the Rock Island District operational area. Total estimated cost: $2,100,000. Through FY 86: $50,000 to initiate design. FY 87: $1,100,000 to complete design and to initiate construction. FY 88: $950,000 to complete construction.

(6) Replacement Derrick Boat (Continuing): A derrickboat is essential for timely major structural maintenance and emergency repairs at Huntington District navigation projects. The new derrickboat will be especially important at both Gallipolis and Winfield Locks. Lock outages at Gallipolis and Winfield Locks have severe economic impact on Ohio and Kanawha River commerical navigation. The proposed derrickboat will have the capability of removing and installing both upper and lower miter gates on the Kanawha River Locks and upper miter gates at Gallipolis Locks. The upper miter gates at Gallipolis Locks were replaced several years ago. The acquisition of this derrickboat would allow speedy repairs if a major accident to the gates should occur as one did in March, 1984. Spare miters are on site at Gallipolis. The ability of the proposed derrickboat to reduce lock downtime for repairs makes it essential, in order to provide continued navigation in this important segment of nation's inland waterway system. Total estimated cost: $4,000,000. Through FY 1986: $500,000 to initiate design. FY 1987: $1,000,000 to complete design and initiate construction. FY 1988: $2,500,000 to complete construction.

(7) Survey Vessel (Continuing): A replacement for the S/B CANAVERAL is required in order to meet the long range hydrographic survey requirements projected for the Jacksonville District. The S/B Canaveral is a 45-foot, steel hull, aluminum cabin vessel which was acquired in December 1959 for hydrographic survey and inspection assignments throughout the District. When the vessel was initially placed in service, the vast majority of its assigned projects were associated with sheltered, or bay disposal sites. In the past 10-15 years, however, the majority of the projects utilize offshore or open water disposal sites due to EPA and DER requirements. In order to effectively perform pre- and post-dredging surveys, environmental monitoring, and spoil placement verification at these outside disposal sites, some of which are 28 to 35 miles offshore, a vessel capable of speeds in the 25-30 mile-per-hour range will be required. Additionally, a vessel with a wider beam and longer length will be required for improved stability and handling at these offshore sites. The top speed of the CANAVERAL is approximately 15 MPH. A replacement vessel capable of a top speed of 25 MPH would reduce the transit (non-surveying) time by 40 percent and therefore increase the available survey time of the vessel, as well as provide an extra margin of safety due offshore surveying locations. This vessel will be 1 of 3 vessels of standard design in which procurement will be initiated in 1986. Total estimated cost: $1,700,000. Through FY 1986: $50,000 to initiate design. FY 1987: $500,000 to complete design and initiate construction. FY 1988: $1,150,000 to complete construction.

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d. Fixed Land Plant:

(1) Water Control Data Systems (Continuing): Water Control Data Systems (WCDS) are used to collect hydrologic data for the regulation of water resources projects consistent with authorized project purposes such as hydropower and flood control. Equipment acquired under this category is required to make daily regulatory decisions for retention and discharge flow rates for more than 500 water resources projects that include lakes, locks, diversion, and other control structures. Environmental data which are required for decision-making are measured at remote stations and transmitted to Corps reservoir control and water management centers. At the centers, the acquired data are processed, analyzed, and displayed for detailed evaluation and the development of water management decisions.

Corps personnel determine the amounts of water to be stored and the timing and magnitude of water to be released to downstream locations. These decisions and pertinent related data are disseminated to affected elements of the water resources community, which uses the information to take appropriate actions. The process of collecting, evaluating, and distributing data must be accomplished in a timely manner to support authorized projects effectively. Project purposes include flood control, hydropower, navigation, water supply, recreation, and environmental concerns. This category includes dedicated WCDS computers, measuring devices and telecommunications facilities, display devices, standby power supply facilities, and weather data acquisition equipment. Essentially, the ultimate goal is to improve existing systems to reduce costs and increase project benefits. The value of the Corps of Engineers installed water control data systems and associated communications equipment purchased since the initiation of this program in FY 80 is estimated to be approximately $35,700,000. This equipment has been acquired from both Revolving and Project Funds. Total funds to be requested for the Corps Water Control Data Systems from all appropriations over the next five years will be in the range of $9,700,000 with more than half being financed through the Revolving Fund. Since the Corps Water Control mission is a continuing one, funds for additional upgrades will be requested as needs change and technology advances. Overall automation system improvements will result in benefits far in excess of implementation costs. Anticipated benefits are based on functional and actual manpower savings, increased project regulation benefits, and improved performance of mission tasks. Through FY 86: $19,200,000 for equipment, which was expended in all CONUS divisions. FY 87: $1,200,000 for continuation of water control data systems upgrades at LMVD, NPD, and ORD and for miscellaneous equipment for MRD, NCD, SAD, SPD and SWD.

(2) Computer-Aided Design and Drafting Equipment (CADD) (Continuing): This item was approved for initiation in FY 84, and includes equipment and software for the preparation and maintenance of engineering/architectural drawings and master plans for Civil Works project features, including dams, reservoirs, beach protection, flood protection and navigation structures, etc., and military installation construction plans and topographic displays. CADD equipment includes from 1 to 8 workstations interfaced to a mini-computer CPU with magnetic disk and tape auxiliary storage devices. Each workstation consists of keyboard and digitizer tablet input devices and video displays and plotter/printer output devices. CADD

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equipment is justified for installation at multiple Corps offices. A group acquisition is necessary to achieve standardization of CADD hardware and software for the exchange of data files and similar designs among Corps offices. The CADD equipment will be used by both civil and military planners, design engineers and draftsmen for the conceptual development, detail design, design checking of AE contract deliverables, maintenance of revisions during project review phases, and for recording "as built" states during and following construction. Compared to manual methods, computer-assisted design and drafting provides an average manpower efficiency ratio of approximately 3.5 to 1. Analysis of the costs of manual preparation of drawings versus CADD preparation indicates an average benefit-to-cost ratio of 1.3 to 1. Estimated cost: $32 million. Through FY 86: $450,000 for design. FY 87: $11,000,000. Remaining requirements will be programmed in future years.

(3) Radio Communications Replacement Program (Continuing): This is a grouped item request which was presented for the first time in the FY 85 request to indicate overall radio communications annual requirements. There are no single item costs in excess of $700,000. The Corps of Engineers civil works telecommunications resources include radio communication systems which are used to perform specific communication functions in support of Corps projects and programs. These systems include fixed, floating plant and vehicular stations which operate in the high frequency (HF) band for long haul communications; the ultra high frequency (UHF) band for fixed station, mobile and vessel communications for point-to-point communications; and, the microwave band for multichannel radio relay communication. A large percentage of these systems/networks were conceptualized or designed over 30 years ago. They have remained operational up to this point in time through the incremental replacement of components within the systems as funds were authorized. Many of these components are no longer being manufactured and are therefore unavailable. It is only a matter of time before these systems will disintegrate due to age and/or lack of replacement parts and seriously jeopardize the Corps ability to respond to mission requirements. To insure continuity and the continuing operational capability of these systems, a systematic and scheduled replacement of these antiquated systems with systems of the appropriate concept and design is being initiated. Corps offices will investigate the most efficient and economical alternatives in upgrading their communications (including use of commercial facilities) and provide documentation prior to initiating upgrades. Estimated 1985-1989 program cost: $23,210,000. Through FY 1986: $12,500,000. FY 87: $6,000,000 with $4,710,000 required in future years.

e. Automatic Data Processing Equipment (ADPE) (Continuing):

(1) Corps of Engineers Automation Plan (CEAP): The current Corps of Engineers ADP systems are scheduled for replacement under the Corps of Engineers Automation Plan (CEAP). The Corps has selected an in-house system, consisting of up to 61 local processors at 54 Corps FOA, each tailored to specific site workload, with a communications network to support data communications traffic among sites and between sites and Corps Headquarters; follow-on commercial teleprocessing service contracts will be acquired to support large-scale scientific and engineering applications at all sites and to support those applications and

functions which operate outside of the traditional division/district framework. The system will be installed on a division by division basis in the period FY 88-91. The estimated investment cost for CEAP is $85 million for the computer systems and associated one-time costs; $5 million for data communications equipment; and, $5 million for design costs, software conversion and project management operations. Software conversion and project management costs and that portion of each that must be capitalized are still being evaluated and may increase this estimate. Total estimated cost: $95,000,000. Cost for development, final preparation of the RFP and project management through FY 86: $4,400,000. FY 87: $2,000,000 for initiation of acquisition. FY 88-91: $88,600,000 for installation, equipment, and software conversion.

(2) Remaining Requirements: Other capital investments are required for recurring ADPE needs. Included are general purpose microcomputers, graphics display terminals, interactive terminals, plotters, remote job entry devices, digital communications equipment supporting Corps ADPE, etc. Studies conducted by the Office, Chief of Engineers, field offices, and laboratories have indicated the need for improvement in data gathering, handling, and communications, as well as a need for increased general office automation. Items include dedicated word processing centers, micro computers used for such office functions as word processing, electronic mail, spread sheet application, small data base applications and communications with main frames for storage and retrieval of management information. Recurring ADPE is utilized to improve the interfaces between separate computer configurations, to improve the communications transmission capability, and to replace ADPE that has reached useful life expectations. Graphics is required to provide multistructural levels in complex structures design and analysis; high-order plots of engineering data such as cross-sections, instrumentation data and isometric drawings require stand-alone plotter devices or plotters supplemental to microcomputer set-ups. Microcomputers are repeatedly requested and are being justified on a cost benefit basis to support both management and business and scientific and engineering applications required in district offices. In summary, the demand for quick access to accurate information at operational levels has generated requirements for ADPE in functional areas where it was previously absent or in functional areas where modern upgrade is required. All remaining requirements are reviewed for consistency with CEAP. FY 1986 Estimate: $12,000,000. FY 1987 Requirement: $16,000,000.

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Justification of Estimates for Civil Functions Activities
Department of The Army, Corps of Engineers
Fiscal Year 1987

SUMMARY OF ALL APPROPRIATIONS

Appropriation Title	FY 1986 Allocation $	FY 1987 Request $	Increase or Decrease $
General Investigations	128,972,000	127,000,000	- 1,972,000
Construction, General	919,345,000	1,072,500,000 2/	+153,155,000
Operation and Maintenance, General	1,319,973,000	1,420,000,000	+100,027,000
Flood Control, Mississippi River and Tributaries	314,760,000	298,000,000	- 16,760,000
Flood Control and Coastal Emergencies	25,000,000	25,000,000	0
General Expenses	107,000,000	115,000,000	+ 8,000,000
Revolving Fund	7,000,000	12,000,000	+ 5,000,000
Permanent Appropriations (Estimated)	9,000,000	9,000,000	0
Total	2,831,050,000 1/	3,078,500,000	+247,450,000

1/ Does not reflect reductions required by the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177).
2/ Includes $26,000,000 to be derived from the Inland Waterways Trust Fund.

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General HATCH. Mr. Chairman, we are ready for your questions now.

PROGRESS IN AQUATIC PLANT CONTROL

Mr. BEVILL. I am glad to hear you mention these aquatic plants, and then Dr. Roper went into it even more. You know we have been fighting that battle for many years now. Are you making any progress? I have heard about the fish and all that but I haven't seen any results from it. When are we going to get some results?

General HATCH. Considerable progress has been made in control of aquatic plants, particularly in the southeastern United States with species such as water hyacinth and alligator weed. In many areas, such as the St. Johns River in Florida, water hyacinth has been reduced so that we can now keep the plant in check with maintenance level programs.

Our Aquatic Plant Control Research Program has produced new technologies, such as two biologic agents, which have greatly reduced the acres of water hyacinth in Louisiana and enabled us to devote our spraying effort to the most critical infestations. The research program also made available the Agasicles Flea Beetle which has been very successful in controlling infestations of alligator weed in the deep South.

I do not mean to imply that our country's aquatic plant problems have been overcome, because they have not. Introduced exotic aquatic plants, such as hydrilla and watermilfoil, are on the increase and their tolerance to temperature variation enables their spread to areas of the country which previously enjoyed relative freedom from such problems. Infestations of watermilfoil, for example, presently exist from New England to the deep South to the Pacific Northwest.

Our ongoing research program is telling us more about the physiological requirements of problem aquatic plants and is producing new biological, mechanical, and chemical technologies for their control. Our technology transfer efforts are getting these tools into the hands of users at the Federal, State, and local levels in the shortest time practicable.

HYDRILLA PROBLEM IN THE POTOMAC RIVER

Sir, I might also mention that of local interest, of course, is the hydrilla problem right here in the Potomac.

Mr. BEVILL. We have it on lakes in Alabama. It is a real problem for the boats.

General HATCH. The Baltimore District has completed a study. We have it out for comments at this time. It recommends mechanical means. We have looked at chemicals, we have looked at fish, we have looked at a lot of other things, and just plain mechanical means of harvesting the hydrilla in areas where it is choking the harbors and waterways seems to be the most feasible. We have money in our 1987 request to initiate some of that action.

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COORDINATION OF AQUATIC PLANT CONTROL R&D AND RESULTS WITH OTHER AGENCIES

Mr. BEVILL. The TVA is spending their money to work on this, too. We have been fighting that battle for a long time in several areas. As a matter of fact, are you all doing any coordinating? Do you ever check and see what the other one is doing?

General HATCH. With agencies such as the Bureau of Reclamation and TVA, we have periodic meetings solely for the purpose of technical exchanges on projects such as this one and the full spectrum of water resource related R and D.

Dr. ROPER. There are three areas that we are focusing our Aquatic Plant Control R and D on. One is chemical control. We are looking at methods for improving the efficiency of chemical controls on problem water plants, with minimal impact on other aspects of the environment. We are also looking at mechanical harvesting. In this area, we have developed a simple desk-top microcomputer program for users to determine the optimum harvesting schedules and best selection of mechanical harvesting equipment.

We are also doing a lot of work in the biological control of water hyacinths and other plants. Our work in California is in its third year, and the beetles that have been released are proving to be quite effective.

Mr. BEVILL. How about the weed-eating fish? Is that proving successful, or what kind of results are you getting from that experiment?

Dr. ROPER. We did an early study in Lake Conway in Florida and demonstrated that the fish were effective in controlling aquatic plants. Since then management tools have been developed such as the stocking rate computer model, to allow the Corps and other organizations and municipalities to design programs which optimize the use of the fish. A number of municipalities, including Fairfax County, are using the aquatic weed-eating fish to control aquatic plants.

Mr. BEVILL. We have milfoil down there. Is that the same as that found on the Potomac?

Dr. ROPER. It is hydrilla in the Potomac, which is much more difficult to control.

COOPERATIVE EFFORTS WITH FOREIGN GOVERNMENTS

Mr. BEVILL. In Secretary Dawson's statement yesterday, it states "we should avoid authorization of new programs." Why are you requesting $250,000 for new programs regarding cooperation with foreign governments, and how has this program been financed in the past?

General HATCH. Sir, as I indicated in my summary remarks, I think what we have really done is, we have cleaned up our bookkeeping. In the past we have spent perhaps something comparable to that, but it has been scattered about a number of aspects of our program, and not as visible as we think it ought to be. It is coordinated rather informally and casually with your committee staff in that regard. We believe the program warrants that level of visibility, even though it is a fairly small amount considering our entire programs. I would say it is not a new program. It is a change in

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our bookkeeping to highlight any of those activities we would ask you to fund.

FLOOD PLAIN MANAGEMENT SERVICES PROGRAM

Mr. BEVILL. The Conference Report on the FY 1986 Energy and Water Development Appropriation Bill provided $7.3 million for the Flood Plain Management Services program, yet you are allocating $7.8 million, as shown on page 8 of the justifications. Why are you allocating more than we provided, $500,000 more, half a million more?

General HATCH. Sir, there has been an increase in our requirements that we were projecting throughout this fiscal year: the demand for our services, the demands for information from the local, private and public sector.

Mr. BEVILL. Well, General, is there any point in us putting these numbers in there if you all are going to make your own decisions on what the numbers are? We would be wasting our time in setting out this money for each project or, if you all are going to do that, you ought to let us know.

General HATCH. We try and mark against the Conference Committee Print and we use that as a goal but, by the time we prepare the budget, a program may be slightly up or slightly down in the year in which it is accomplished, and we felt that in this case it was a fairly minor adjustment, an adjustment to what the committee had suggested. It's not unusual for us to make slight changes in one of these items.

Mr. BEVILL. What cost-sharing is being proposed for projects in the Small Projects Program or in the so-called Continuing Authorities Program?

General HATCH. Sir, that would be the same cost sharing provisions as agreed to by the Administration and the Senate majority leadership for construction new starts which are specifically authorized.

Mr. CLUFF. I might add, sir, on Section 14 projects, last year in testimony we stipulated that Section 14 would retain the standard cost sharing and would not be changed, and we are maintaining that this year for Section 14.

CURRENT CALIFORNIA FLOOD SITUATION

Mr. BEVILL. All right. Now could you give us an update on the California flood situation?

General HATCH. Yes, sir, I can. We have been getting almost hourly situation reports from our South Pacific Division, headquartered in San Francisco. In fact, I spoke to General Palladino at about 8:30 this morning and I got an update from him on what's happening.

As you know, the storm continues out there. They had about a 6-hour lull over the last 24 hours, but the rains have come back and are in fact continuing. They expect in the delta area perhaps a crest, high water, sometime late tomorrow as the storm is developing. All of the rivers in that area, I would assume, will perhaps have record flooding, some universal records. Nineteen inches of rain fell in various areas, and as much as 33 inches was reported at

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one site within the last week, which is really phenomenal. I recall the flood of record we had in the Cumberland Basin when I was in Nashville. We only had 10 inches over a period of about 4 days, and that gave us a flood of record.

The areas of greatest concern would logically be in the major metropolitan area of Sacramento. It appears that our Federal levees there are holding even though they have never been tested by water this high or this much flow. They are all saturated; they are soft. We have a levee watch underway right now. We do not expect them to be overtopped by this event, although I will say they'll be stressed. We have contractors standing by to respond to any particular trouble spots that may be identified.

There was a BuRec dam that has been held up, I believe due to some litigation, and they had a coffer dam that failed last evening. However, the dam immediately downstream was regulated to reserve enough storage space for this possible eventuality and was able to completely catch and hold all of the water that came from that particular failure. That did not pose any additional threat to the downstream area of the American River.

Mr. BEVILL. Was that Auburn Dam?

General HATCH. Yes, sir.

Mr. BEVILL. Is the Folsom Dam going to be able to hold it?

General HATCH. It has held it, sir. It has held it. It was designed—the coffer dam, I might add, is designed to fail under those conditions. In fact, I think one would show on audit, if you will, that that entire process occurred as it was intended to. The failure took about two hours to occur once overtopping began.

Mr. BEVILL. The Chair recognizes Mr. Myers.

Mr. MYERS. Thank you, Mr. Chairman.

General, surrounded by all those doctors, you must feel somewhat comforted. However——

General HATCH. Humbled, sir.

Mr. MYERS. Humbled? [Laughter.]

COOPERATION WITH FOREIGN GOVERNMENTS

Mr. MYERS. You mentioned your cooperation with foreign governments. What are some of the successes and accomplishments and some of the benefits that you have had from these cooperative projects with other countries, as far as research is concerned?

General HATCH. Largely in the technical areas—if I can set aside a little bit of modest help to developing countries which, in almost all cases, is through a State Department-sponsored program, again not funded by this committee—when you consider, for example, and we discussed it briefly yesterday, our activities in China, the Chinese have been engaged in water resource development for at least 900 years, if not more. Although the Cultural Revolution perhaps set them back several decades, we have a lot of things we can learn from them.

I believe that General Heiberg yesterday mentioned parallelisms between some of their delta silting problems and some of ours, and we just haven't had exchanges with them. They have been working

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those problems, again, as I say, for centuries, and we simply need to be sure that what we are doing is in fact taking advantage of what they have learned in that kind of a process.

One might even consider opportunities with the Soviet Union, in looking at—this is a bit on the military side—looking at some of their cold-weather construction. They are past masters at that. They have been dealing with permafrost construction, again, for years and years and years, where we have modestly in our Northern Tier of Alaska. We have opportunities to learn quite a bit from them on that.

ADVANTAGES TO THE U.S. PRIVATE SECTOR FROM FOREIGN TECHNICAL COOPERATION

I might say that, very clearly, any of our efforts that would be funded by our program in the foreign countries business would be something to enhance our ability to serve the American people. Such efforts may also, perhaps, help in opening doors for American entrepreneurs, to gain them some opportunities.

In China, for example, today the Chinese, although they have been approached by a number of folks in the private sector, are a little hesitant to leap right into our capitalist way of doing business, and are a little more comfortable in dealing with the public sector. They are familiar with us, and we see an opportunity to provide, if you will, a potential lubricant for the American private sector to get in there, where right now they don't have very many opportunities. The Chinese have a lot of labor. They don't need workers but they need management, and maybe that's something we should offer them as a service we sell—not the Corps as much as the private sector should sell.

Dr. Roper, do you have any particular comments on some specific benefits and technical opportunities? I know our Waterways Experiment Station, under our R and D Directorate, has actually been managing some of the specifics.

EXAMPLES OF BENEFITS TO U.S. FROM FOREIGN TECHNICAL COOPERATION

Dr. ROPER. Yes, sir. Of course, our laboratories have done, as General Hatch has mentioned, a number of projects in a variety of areas to help other countries. Examples include assistance with beach erosion control, and inland waterway systems. These projects are funded either by the recipient of the service or through an assistance program such as AID funded by the State Department.

We also do a limited number of joint projects where each country benefits and the costs are shared. One that has recently started with China is the Muddy Coast Sediment Study in Hangchow Bay, just south of Shanghai. This data collection and analysis project will lead to a better understanding of fine sediment movement and the effects of waves and currents on sediment movement. An advantage of the Chinese study is the 500-year history of bay shoreline change that gives a unique insight into long-term changes that occur on an eroding muddy coast shoreline.

Another benefit area with our China cooperative work is the opportunity to compare our modeling methods. We have both devel-

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oped, independently, empirical equations for simulating various physical phenomena. We feel it will be very useful to compare approaches and results. It may lead to important new understandings of physical processes and better tools for the Corps to use in designing Civil Works shore protection and navigation projects.

The Chinese also are using some techniques that are different from the Corps' in their physical model studies. An example is ground porcelain powder in the water to simulate suspended sediment load. I think there are a number of things that we can learn from a scientific and technological standpoint.

The other factor I would mention is that the Chinese can provide a large amount of manpower. This gives us the opportunity to collect and analyze data on a prototype scale at almost no cost to us, which would be impractical to do in the United States. For the muddy coast project, on an annual basis we are planning to utilize two-thirds of a man-year; the Chinese are providing over 30 technical man-years, and doing all or most of the manual collection of data, and installing and maintaining the instruments.

These projects are funded either by the recipient of the service or through an assistance program, such as AID, funded by the State Department.

BENEFITS TO U.S. FROM TECHNICAL COOPERATION WITH LESS-DEVELOPED COUNTRIES VS. COSTS OF ASSISTANCE

Mr. MYERS. Well, the examples that you have given here, of course, I think there is something to be gained, but in this austere time we find ourselves in now, I wonder what benefits the American taxpayer will get from this investment? As we look here in Congress for places to cut, it seems to me from what you have told us today that we are not gaining near as much as we are helping other countries. It's humanitarian and it's good for us to help other countries if we can afford it. So far, from the looks of the things you have identified here, we are helping them but we are getting little back in return except the satisfaction of helping them find these things.

I remember about 10 years ago the Chairman and I were over in China and we were visiting—I don't know whether you went on that trip or not, Tom—we went down along the Honshu, I guess, and we found the Shumon hydroelectric generating station built there wasn't operating. They didn't operate it because the Russians built it. What do you learn from that? I don't know what we learned from something like that.

You talk about manpower. Sometimes you see the massive number of people out in the fields, working in agriculture, harvesting, planting, and caring for the crops, but yet it's a low-capital investment. Probably for them it's cheaper to do it that way, with manpower, than it would be to mechanize, because there is little capital investment there. But I just wondered what benefit we would gain. After all, we can go down on the delta below New Orleans and learn a little bit about sedimentation.

Dr. ROPER. That's exactly where we plan to apply what we learn from the Chinese. There are many similarities between the processes and sediment loads in the Mississippi and the muddy cost area

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of China. Getting a better understanding of these processes will have a direct application to problems in the lower Mississippi delta and the Atchafalaya River delta.

Mr. MYERS. I have not seen that area recently, but many years ago I flew over it, and I remember back then it didn't look like the lower delta. I don't know what they are doing. We can learn that. I can tell you there are no people on unemployment and welfare in China.

COST SAVINGS FROM R&D

Gentlemen, you mentioned R and D, that there was cost saving in design and construction you had from R and D. Could you give us an example or two of what cost savings you have in R and D?

Dr. ROPER. One example is our CASE program, which stands for Computer-Aided Structural Engineering program. It is an ongoing research program. This is a computerized tool for our field designers, to facilitate optimal design of Corps projects. Over the 5 years, we have saved over 285 man-years of effort as a result of applying this research tool, and a savings of over $27 million.

Mr. MYERS. Is it similar to what blueprinters use today? In a computer they draw blueprints so much more quickly.

Dr. ROPER. It's not computer-aided drafting. It's a structural design program that allows the designer to rapidly evaluate alternative designs and select the best one for the specific application.

Mr. MYERS. If you have other information, you could provide it for the record.

General HATCH. If we could, we have them in several different categories.

Mr. MYERS. Just briefly, you might identify some of those.

[The information follows:]

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EXAMPLES OF SAVINGS THROUGH CIVIL WORKS GENERAL INVESTIGATIONS RESEARCH

PROBLEM ADDRESSED	SOLUTION	SAVING
Inability to design and construct embankments on soft and failed foundations.	New design and construction concepts, new test methods, improved analytical procedures, and enhanced construction control and performance monitoring systems were developed and used for building a reinforced embankment on soft and failed foundations.	Estimated saving more than $1,270,000 on one prototype water-retention structure where conventional construction had been unsuccessful for more than 45 years. This technology used on dikes and other low embankments will save more than $700,000 per per mile.
Determining the spacing and sizing of dowels needed to anchor replacement concrete to vertical walls of navigation locks.	A rational design procedure was developed which typically results in the use of one-fourth as many dowels as had traditionally been used.	Documented saving of $1,000/ft of lock wall rehabilitated has been reported by the use of this design procedure. Corps L&Ds are typically 1,200 ft long, and we will rehabilitate at least one per year, which results in an annual saving of $1,200,000.
Lack of adequate design criteria for pumping station sumps and discharge outlets.	Developed new technology and design guidance for sump geometry, pump location, and pump intake shape to achieve improved performance.	More efficient and trouble free pumps and reduced repair of bearings, blades, and castings of 20 or more pumps per year, at a cost of about $25,000 each, for an annual saving of $500,000.
Determine design criteria for stability of beach fills to increase their useful life.	Methods developed to determine optimum borrow material, overfill factors, optimum berm elevation and width, foreshore slopes, and feeder-beach location.	Methods provide improved project design, reduced maintenance costs, and reduction of beach/property loss. Optimal design will optimize beach maintenance and rehabilitation costs. Report of the Task Force on Shore Protection (1985) gives beach nourishment costs of $36/million yr. Advanced design methods have increased useful life by at least 5 percent, resulting in saving of over $1.8 million/yr.
Acquisition of timely hydrometeorologic data for making real-time water resource decisions.	Sensors developed and tested to obtain hydrometeorologic data in near real-time.	$1,000,000/annually through more timely and accurate data available to improve water resource management decisions in the field.

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COLLABORATION WITH OTHER FEDERAL AGENCIES ON R&D

Mr. MYERS. You have worked with the Department of Energy or the National Science Foundation. You have worked with other agencies, too, but I use those two as examples.

Dr. ROPER. Yes, we have had a number of joint projects. We also coordinate our research with the Bureau of Reclamation and TVA and Bonneville Power, through our biennial Interagency Research Coordination Conference. An example of a joint program is our riprap study with the Bureau of Reclamation. We have similar needs in this area and the applications can be used by each agency. We also have joint projects with the Forest Service, the Fish and Wildlife Service, and the TVA, We do have some common problems that can be solved jointly. We can take advantage of the particular expertise another agency has. In some cases, another agency can use some of our expertise or laboratory equipment that they do not have.

Mr. MYERS. Do these other agencies pay for these services?

Dr. ROPER. Yes, sir. When they use our equipment, they reimburse the Corps through an interagency transfer of funds for that portion of the work, and we would do the same if we used theirs.

Mr. MYERS. A couple of years ago this committee funded or started funding a new materials lab at the University of California. Are you doing anything out there, helping them get this established?

Dr. ROPER. I am not familiar with any specific projects we have with that materials laboratory. However, I will be happy to look into it and provide further information for the record.

[The information follows:]

CONTRACTS FOR R&D ON CONCRETE WITH FACULTY MEMBERS OF THE UNIVERSITY OF CALIFORNIA AT BERKELEY

The Corps does not have a contract directly with the new Materials Laboratory in the Department of Civil Engineering at the University of California, Berkeley. However, we do have two contracts with members of the Civil Engineering Department staff at Berkeley. In the area of underwater concrete repair, we have a contract with Professor Benjamin Gerwick; and in the area of thermal stresses in concrete, we have a contract with Professor Edward Wilson.

Mr. MYERS. I had some reservations about it, and still do, but they are going to need all the help they can get from all sources to make it work.

PREVENTION OF AQUATIC PLANT BUILDUP

You mentioned the aquatic plant problem. How about prevention? Is anything being done about preventing this buildup? We are working on ways to eliminate it after it exists. What about preventing it?

General HATCH. Dr. Roper?

Dr. ROPER. I am not aware of any preventive research.

Mr. MYERS. Prevention is often a lot cheaper.

General HATCH. The only thing I have seen is harvesting it mechanically, chemically, or weed-eating fish.

Mr. PFEIFFER. I work with Dr. Roper——

Mr. MYERS. Please identify yourself for the reporter.

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Mr. PFEIFFER. I am Jesse Pfeiffer. I work with Dr. Roper, sir. We have not yet moved into the prevention stage. We have been trying to overcome what is there, rather than to stop it altogether.

RESTRICTIONS ON USE OF DIQUAT FOR AQUATIC PLANT CONTROL

Mr. MYERS. I believe it was last year I asked about it, and they said Diquat was a new chemical being used. We have one community that has a lake for their water use. I suggested Diquat. I suggested it and someone—it may have been Purdue University—or something said they can't use Diquat. Is that correct, you can't use it in a reservoir that you have as a water source?

Dr. ROPER. My understanding is that Diquat may be used in certain applications when applied in accordance with guidelines on the label. It is an EPA-approved chemical for certain applications, including control of aquatic plants. We have studied Diquat application under various growing conditions and with various techniques of application, including the use of emulsifiers to make the chemical attach more effectively to the plant, thus reducing the amount of Diquat application necessary to control the plants.

Mr. MYERS. Does it create a problem of fish kill?

Dr. ROPER. I don't know, sir. I would have to know more about that site application.

Mr. MYERS. But to your knowledge——

Dr. ROPER. To my knowledge, it is approved by EPA for specific applications. Diquat is resistered for aquatic use in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act. However, some safety precautions must be observed.

Generally, treated water cannot be used for animal consumption, swimming, or spraying within 10 days after treatment unless analysis shows that the water does not contain more than 0.10 mg/l Diquat ion. Treated water may not be used for drinking purposes or overhead irrigation until 14 days after treatment or unless an approved analysis shows that the water does not contain more than 0.01 mg/l Diquat ion. The interim tolerance for Diquat in potable waters is 0.01 mg/l. There is no restriction on the catching and removal of fish from the treated area.

Mr. MYERS. Well, I have been advocating it, and farmers say they can't find it for farm ponds. Where would they get Diquat?

Dr. ROPER. I am not familiar with the supplier.

CONTROL OF HYDRILLA IN THE POTOMAC

Mr. MYERS. What is it going to cost to rid the Potomac of hydrilla, or will we ever do it?

General HATCH. No, sir, we never will.

Mr. MYERS. Will it be ongoing every year?

General HATCH. It will be ongoing every year. As a matter of fact, we are acting to prioritize those areas which we would attempt to harvest, and it is going to be to provide only, if you will, access to the harbors and marinas and that sort of thing. We won't be able to completely clean it out. That will be a continuing problem.

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REVIEW OF PROJECTS FOR DEAUTHORIZATION

Mr. MYERS. While we are searching for places to reduce unnecessary spending, I notice that you are requesting $200,000 to review authorized Corps projects for consideration for deauthorization. Is that absolutely essential this year? Couldn't we use that $200,000 for studying ways of prevention? Wouldn't that be a better investment for us, when we are trying to prevent aquatic plant problems in water? Why do we need to look at that? We are not spending the money on those projects anyway. I think $200,000 is too much in this austere time, in a time when we ought to be looking at ways to save money. These authorized, unfunded projects are not costing us anything right now.

General HATCH. No, sir, they are not.

Mr. MYERS. I, for one, will be recommending we not spend that $200,000 this year for that. I would rather see it spent on a program for prevention.

BUDGET REQUEST FOR TRANSFER OF $3 MILLION TO GENERAL EXPENSES

My last question: What are you going to do, if we don't have a supplemental this year, for the $3 million for the pay increase?

General HATCH. We're not proposing to get more money. We have asked for a transfer from O and M, $3 million out of O and M, into the——

Mr. MYERS. Oh, that's what you're going to do.

General HATCH. Yes. We're not requesting an increase in spending, just moving it from one account——

Mr. MYERS. It still takes legislation, though.

General HATCH. It still takes legislation, and it would have to be done through a supplemental act or some appropriation act, which is the only way to do it.

Mr. MYERS. I have two or three other questions I will leave to be answered for the record.

Congressman Rudd wanted to be here. He has some interest in the central Arizona project, and I think he has some questions he will want to ask you about that, but he had to go to another meeting.

Thank you very much.

BENEFITS FROM REVIEW OF PROJECTS FOR DEAUTHORIZATION

Mr. BEVILL. General, on that question of the $200,000 that Congressman Myers was asking about, I think it would be well, before we take this bill to the floor of the House, if we put the $200,000 in there, to have more information there on what benefits will have been received and what can we expect to receive from the $200,000.

General HATCH. We will provide that for the record.

[The information follows:]

RATIONALE FOR THE DEAUTHORIZATION REVIEW

There are two reasons why we pursue the Review for Deauthorization. The first is that the review of unconstructed projects for deauthorization is directed by Section 12 of Public Law 93-251, as amended. That law requires the Secretary of the Army to submit an annual report to Congress listing projects recommended for deauthorization. Secondly, the Corps has been saved and will continue to save the record-

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keeping costs of the 475 projects deauthorized over the past ten years, and it will enjoy additional savings on those projects deauthorized in the future. Moreover, the removal of these projects, which are not viable, from our records makes the backlog of uncompleted work more realistic.

Mr. BEVILL. The Chair recognizes Mrs. Boggs.

Mrs. BOGGS. Thank you, Mr. Chairman.

I apologize for being late, and I'm so sorry I missed the segment on China and the overseas programs.

FLOOD PLAIN MANAGEMENT SERVICES PROGRAM AND FLOOD INSURANCE

I am interested in the Flood Plain Management Services, which of course are very vital to my area of the country, as they are to all the other areas with similar problems. One of the difficulties that I have felt in the last couple of years, as far as the continuance of the Flood Plain Management Program, has been in the area of the Flood Insurance. They are continually raising the actuarial rates and having the people pay more and more for their flood insurance. I have found that in several cases the people dropped their Flood Insurance because they were unable to meet the increases, and then of course were saddled with a great loss.

What concerns me even more than the individual losses of persons and businesses is the fact that for a good Flood Plain Management Services Program to continue and to be able to relieve the country of some of the difficulties it has experienced through the years, we have to tie in the Flood Insurance Program to the Flood Plain Management Program. If indeed we make the Flood Insurance premiums too high for the people to participate in, then we are going to have a breakdown of the Flood Insurance Program. If indeed the administration wishes to put all of the Flood Insurance Program into private hands by 1988, I am curious about what the relationship would be between the Flood Plain Management Services Program and a private insurance program which the people would simply have to deal with directly.

General HATCH. Well, as you probably know, ma'am, we don't get involved in the rate-setting business.

Mrs. BOGGS. Oh, no. I know you don't.

General HATCH. We do the studies and we provide the data on which that is based.

Mrs. BOGGS. That's right.

General HATCH. Those studies are also made public. They are public documents. In fact, they are normally presented in a public meeting, to do our best to ensure that they have wide dissemination to both the local public and private sector. I would think that that information, if the local folks are required to go to the private sector for their insurance, is going to provide potentially devastating information that would be used to make it extremely difficult for someone to get private insurance. In fact, I would assume that one of the reasons the Federal Government got into that business in the first place was the recognition that without the Federal assistance in that insurance program, it would simply never be.

Mrs. BOGGS. Oh, of course that's true. My husband was the father of the Flood Insurance Program, but the private insurance companies couldn't afford to issue any kind of policies that people

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could afford to pay for, and so they did not cover flood damages in their comprehensive policies. The Flood Insurance Program had a dual purpose. One was to provide coverage for the people; the other was to put into place good flood plain management, so that the localities where the people would be eligible to enter the flood insurance program would have to comply with the recommendations of the Flood Plain Management Services. And so wat I am concerned about is whether the recommendations of the Flood Plain Management Services will be complied with if the people don't have to live in a locality that complies with the Services' recommendations.

General HATCH. I can certainly see where that would erode that pressure for local entities to maintain their requirements, whether it is zoning or whatever building codes they have.

COASTAL FIELD DATA COLLECTION

Mrs. BOGGS. I was also very pleased to have your report on the Coastal Field Data Collection service. We are losing 30 square miles of the coastline in Louisiana every year. It is a prime service area and we are very grateful for it.

REPLACEMENT OF A DUSTPAN DREDGE

You are requesting funds for the construction of a new dustpan dredge. Why is this replacement dredge necessary? How does the Corps propose to dispose of the dredge that it replaces, and do you have a schedule for the replacement of other dredging equipment in the reserve fleet?

General HATCH. To answer the last part first, I don't believe we have any plans to replace dredges in the reserve fleet. However, in our active fleet we would. I might add, the dustpan dredge, as you know, is a vital piece of equipment for maintaining the channel, particularly of the Mississippi River in that area.

We have three of those, our dustpan dredges, and they are really rather old. They are steam-powered. The ages of those three vary from 49 to 51 years. I would assume—and I stand to be corrected—that we would decommission the dredge replaced by this new dustpan dredge.

Mr. ADKINS. That is correct, yes. Joe Adkins, from the Dredging Division. It is planned to replace an old one. This would not be an additional dredge. As soon as the new dredge has been completed and put into service, the other one will be decommissioned, taken out of service and replaced.

CORPS OF ENGINEERS RESERVE DREDGE FLEET

Mrs. BOGGS. Would you please bring the subcommittee up to date on the activities of the Corps of Engineers reserve fleet? Is the reserve living up to its expectations? Would you say that the private dredging contractors are satisfied with its operations, and are any improvements needed?

General HATCH. I will ask my experts to add to what I am about to say in a general sense. I believe that the private sector is reasonably satisfied with our current arrangements, and we are not pro-

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posing any changes to what has been. We are, as we indicated earlier, attempting to modernize on a reasonable schedule our residual fleet. I'm sure the private sector would always say that they would like to have more new construction.

Joe Adkins?

Mr. ADKINS. As far as the reserve fleet is concerned, it only applies to the harbor dredges. There are 13 harbor dredges in the industry, and we currently have 12 of them in the reserve fleet, and we are in final negotiations for the 13th. We actually activated the reserve during mobilization exercises, which were successful, and we actually did work in a test mode, but we actually did dredging work and it was successful. We feel that we have a plan in place that will assist us greatly.

Mrs. BOGGS. Thank you very much. Thank you, Mr. Chairman.

COLLABORATION BETWEEN CORPS OF ENGINEERS AND SOIL CONSERVATION SERVICE

Mr. BEVILL. The Chair recognizes Chairman Whitten.

Mr. WHITTEN. Thank you, gentlemen. How do you do, sir?

General HATCH. Fine.

Mr. WHITTEN. In the years I have been here, one of the real problems has been in the area of trying to take care of our own country. A big part of our problem has been the jurisdiction between various committees of the Congress. We have had a lot of trouble with the Forest Service and the Corps of Engineers getting together, we have trouble with the Corps of Engineers and the Soil Conservation Service getting together, that reflects the situation here in the Congress.

As you are aware, Congress has provided for a Demonstration Erosion Control Program, a pilot program in the United States where the Soil Conservation Service, which has to do with watersheds, is working with the Corps of Engineers. Where you have the right of eminent domain, they do not have. We have made some progress in it. I would like for the record, if you have not, to give us some detail about the situation. I have asked that each keep a good record on it. I have also asked that the ARS Laboratory, the national laboratory in Oxford, Mississippi, be coordinated with the Vicksburg Corps plan, where you've got the whole Mississippi Basin. The point is, we've got a chance here to show the benefits of the two agencies working together.

I couldn't help reading and watching on television about the tremendous floods out in California. How much better it might have been if we had done the work in the watersheds before it got there. That's not the best example but, as you know, my area is the foothills of the Mississippi River Basin. There are hills right adjacent, and all of a sudden it becomes flatland. If you keep the water back in the hills, you may be able to handle it, but if you don't keep it back in the hills you can't handle it.

I am saying this for the record, to show the reason behind this program. I know you have made progress. I know you are working, but I would like you to give the full story of the coordination and the benefits that come from seeing how you can use your right of eminent domain, which the SCS doesn't have. They, in turn, can do

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a whole lot of things you can't do. It takes both of you working together.

One time our friend, General Sands, who was up in New York at the time was before the Subcommittee. He didn't know too much about holding back water. I think when he got down to New Orleans he found out that most of the water is not held back. It shows just what the Mississippi does. So I would like you to include in the record the benefits which come from working together and coordinating the efforts and working together with ARS, the national laboratory, and the Waterways Experiment Station at Vicksburg. Also tell us about what progress you're making and the benefits of the program.

General HATCH. Sir, we will do that. Of course, a good example you have provided where we can demonstrate that coordination is the demonstration Erosion Control Project.

Mr. WHITTEN. Give us a progress report in the record, if you will.

General HATCH. We'll do that, sir.

[The requested information follows:]

JOINT INTERAGENCY TASK FORCE DEMONSTRATION EROSION CONTROL PROGRAM, YAZOO BASIN, MS

The Demonstration Erosion Control Program is being undertaken pursuant to guidance in the Conference Committee Report on the FY 1985 Energy and Water Development Appropriation Act, 1985, and continued in FY 1986. The program is a continuation of joint efforts undertaken between the Vicksburg District and the Soil Conservation Service (SCS) in the Yazoo Basin.

A joint Interagency Task Force was established to develop the program. The Task Force is composed of: the Soil Conservation Service; Vicksburg District, Corps of Engineers; the Agricultural Research Service Sedimentation Laboratory; and the Waterways Experiment Station. The purpose of the Task Force is to develop a comprehensive plan to reduce flooding, erosion, and sedimentation in six watersheds in the Yazoo Basin Foothills.

The Task Force developed a program for FY 1985 and FY 1986 that included selection of construction items for the six watersheds, a determination of which agency should accomplish each item, a definition of work that will be done on the data collection and monitoring program, and continuation of preparation of technical work plans for the individual watersheds. The Vicksburg District and the Soil Conservation Service are using the FY 1985 and FY 1986 funds provided for construction of usable increments in the six demonstration watersheds and for continuation of technical work plans for the watersheds.

Benefits of the task force arrangement include: (1) development of a comprehensive erosion sedimentation and flood control plan addressing the historical concerns of both SCS and the Corps; (2) application of a systems approach to planning and design of the project; (3) coordination of data collection, engineering analyses, and short-term research, minimizing duplication of effort; and (4) sharing of technical knowledge and experience.

Cooperation among the agencies has been excellent and the strengths of the agencies utilized. Some differences have surfaced. For example, differences in design criteria are being reconciled.

There are also differences in land rights acquisition and local sponsor participation. Corps work is a part of the Flood Control, Mississippi River and Tributaries Project. Under current law, the Corps obtains land rights, including takings by eminent domain where necessary, and carries out maintenance. For SCS work, these activities are funded and carried out by local sponsors. As a result, there is a considerable difference in cost to the local sponsor for SCS-constructed features. Under State law, local sponsors have the right to condemn lands by eminent domain for flood control purposes. Condemnation has not been necessary to date.

Mr. WHITTEN. Thank you very much.

Mr. BEVILL. The Chair recognizes Mr. Watkins.

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GRAZING FEES ON CORPS LANDS

Mr. WATKINS. Thank you, Mr. Chairman.

General, welcome back. I guess, before I get into some other things, you were going to bring me some information about grazing, I believe.

General HATCH. Yes, sir.

Mr. WATKINS. If you have that, you might provide that information for me on the problem with the grazing fees in Oklahoma and the difference in the policy. As I mentioned, we have the national forests and we have the Bureau of Reclamation. They have been directed to have a fee of $1.35 per acre per cow per month, and then the Corps has sealed bids, et cetera, and there is a direct conflict. Have you got anything cleared up for me on that? Have you got a good answer for me?

General HATCH. Well, you may not consider it a good answer, sir, but I understand why they are different at this time, at least. The authorities spring from two different sources. Our authority is a rather broad one to lease property which we don't need right now for any other purpose, and it is authorized by Title 10, Section 2667, which doesn't tell us how to do it. The "how"—the bidding process, the lowest bidder, that you described yesterday and again today, sort of, if you will, springs from tradition and a normal way of doing business, and the normal way of disposing, temporarily or permanently, of Government property that's not needed at this time. We have that now codified in just an Army regulation. It's not stipulated in any law or committee language or anything else.

The other agencies' authorities are the Grazing Act, which specifies that there will be a fee schedule, and that fee schedule has been changed from time to time. As you have indicated, the President recently stated that that will be $1.35, in a recent Executive Order. That does apply at least to the Bureau of Land Management and the Forest Service; it does not apply to other agencies. I might add—

Mr. WATKINS. Would that be a legitimate question that we could ask OMB or the President? I mean, if they had enough concern about grazing fees of those two agencies, it would look like they would be concerned about the grazing fees of the Corps of Engineers.

General HATCH. Sir, I think that would be perhaps a legitimate question at that level. At this time we would have no authority within the Corps of Engineers to alter our current procedure, which again we would think at this point is simply sound business practice for the Government in terms of the disposal, in this case temporarily, of their control of a piece of real estate.

Mr. WATKINS. I am going to check further on that because you do have a conflict in policy, you know, and it's in the same county. You can't explain that to those cattlemen down there, why one is one way and the other is the other way, and I think we need to get that cleared up. I don't know exactly what we need to do, but I will try to see if we can direct that Corps policy be the same as the Bureau of Reclamation and also the Forest Service.

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TECHNOLOGY TRANSFERS

Let me ask a question: I am very interested in technology transfer. I was interested in your slides, about the fifth or sixth one back, on what you're doing. Before coming to this committee I was on Science and Tech, and was part author of the Stevenson-Wydler Act, where we were trying to get all the Federal laboratories into technology transfer, not just technology dissemination.

That's two different things, and we have done a pretty good job of technology dissemination, but basically the only group that has really done an excellent job in technology transfer has been the Agriculture Extension Service. They use the work in agriculture at the agriculture research laboratories, and the extension people have taken that directly to the farmer and have supplied it, shown how it can work. I am trying to get that started to a certain degree, in a very small way, with the Corps in technology transfer with the industrial innovation center in my congressional district — Rural Enterprises, it's called.

Could you give us an example of what one or two of those demonstration projects would be on?

FIELD VERIFICATION DEMONSTRATION PROGRAM ON DREDGED MATERIAL DISPOSAL

Dr. ROPER. Well, the one that comes to mind is our Field Verification Demonstration Program. In this program we are assessing the impact of disposing of the same dredge material at three different sites—an upland, a wetland, and an ocean disposal site. We are studing the environmental effects, and developing indicator tests to rapidly measure those effects. The three sites are also being compared to determine the environmental impact differences between them.

The result of that demonstration program has led to the development of a dredged material management strategy for use as a decision-making tool in determining how and where to dispose of dredged materials. It is a joint project with EPA and it is finishing up this year. It is providing new guidelines for how we dispose of dredged material.

TECHNOLOGY TRANSFER VS. TECHNOLOGY DISSEMINATION

Mr. WATKINS. Please provide for the record here a brief summary of the demonstrations, because I am interested in what you are doing in technology transfer.

[The requested information on demonstrations follows:]

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COST OF DEMONSTRATION PROJECTS

FACT SHEET

Mr. Curt Mason
DAEN-RDC
20 Feb 86

SUBJECT: CW R&D Briefing

PURPOSE: To itemize the demonstration projects reported on the Technology Transfer Slide.

FACTS:

1. In response to questions from the Congressional Committee, the demonstration projects conducted during FY 85 are itemized below:

SUBJECT	COST *	DESCRIPTION
Aquatic Plant Control		
Aquatic Plant Harvesting	$35K	Mechanical harvesting demonstration in the Potomac River.
Materials		
Shotcrete Repair	$10K	Concrete repair demonstration using Shotcrete at DeGray Dam, Arkansas.
Deterioration of Concrete in Cold Weather	$40K	Long-term concrete demonstration at Treat Island, Maine.
Water Quality		
Water Quality Monitoring	$150K	Demonstration of water quality monitoring techniques at Richard B. Russell Dam.
Dredge Material		
Marsh Development	$20K	An erosion control demonstration in Mobile Bay Gailliard Island.
Aquatic Disposal	$600K	Central Long Island Sound aquatic disposal demonstration off of Black Rock Harbor.
wetlands/Upland Disposal	$400K	A disposal demonstration at Tongue Point, Connecticut.

* Unless indicated otherwise, represents an approximation of dollars spent in FY 85.

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Remote Sensing Research Program

Devils Lake, ND	$30K	Demonstrated the use of SPOT satellite data to monitor changes in lake level.
Ohio Mainstem	$75K	Demonstrated the use of satellite imagery taken at 10-year time interval to update landuse maps and estimate flood damages through computer programs.
Saginaw River Basin, MI	$50K over two years	Demonstrated the use of satellite imagery to develop landuse database and project future changes.
Saginaw River Basin, MI	$40K	Demonstrated the installation and use of Data Collection Platforms (DCP). DCP's collect hydrologic and environmental data, relay information via satellite to District's Water Control Management Center.
Saylorville Lake, Rock Island District	$1.64M over five years	Demonstrated the networking of remote environmental and hydrologic sensors, satellite relay to data processing computer and Water Control Management Center.
Hart-Miller Island, Chesapeake Bay	$30K	Demonstrated the use of SPOT satellite data to monitor dredge material site. Looking at boundary and mixing effects.
Pittsburgh, PA; New Haven, CT; Cincinnati, OH; Portland, ME	$110K	Demonstrated the use of satellite imagery to estimate the effects of acid rain on materials.
Hartland Dam, VT	$20K	Demonstrated the installation and use of DCP.

* Unless indicated otherwise, represents an approximation of dollars spent in FY 85.

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Dry Creek Watershed, MN	$40K	In cooperation with NASA, USDA, University of SD, Hydrologic Engineering Center, and National Weather Service, demonstrated and tested airborne microwave radiometer versus point ground measurements (soil moisture sensor) as means to estimate soil surface moisture.
Berlin Lake, OH	$35K	Demonstrated the use of multi-spectral scanner data to map land use, monitor water quality, and develop master plan for utilitzation of recreation resources.
Lake Winnebago, Detroit	$35K	Demonstrated the installation and use of DCP for water control management.
	Cold Regions Hydrology	
Sleeper's River Watershed, Danville, VT	$70K	In cooperation with NOAA, NASA and various universities, demonstrated various techniques for monitoring hydrologic and environmental parameters.
Interior Drainage Channels, Alaska	$25K	Demonstrated maintenance and new design for effective drainage channels in severe cold environment.
	River Ice Management	
Peoria Lock and Dam, Illinois River	$160K-installation & one year opns	Demonstrated air bubbler system that keeps lock free of ice, installation and operation of DCP for hydrologic and meteorologic data collection and processing, and installation and operation of time-lapse video cameras for monitoring ice conditions.

* Unless indicated otherwise, represents an approximation of dollars spent in FY 85

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Lock and Dam 26, Miss. River	$75K	Demonstrated the installatien and use of sonar to detect ice build-up on the bottom of barges which can prevent free movement of the barge through the lock and damage lock sills.
Starved Rock Lock and Dam, Illinois River	$145K	Demonstrated the installation and operation of an air bubbler system that keeps the lock free of ice, installation and operation of DCP, and installation and operation of time-lapse vidco cameras for ice condition monitoring.
Lock and Dam 4, Monongahela River	$105K	Demonstrated the installation and operation of air screen to prevent ice from entering lock, and installation and operation of time lapse video cameras to monitor ice conditions.
Marseilles Lock and Dam, Illinois River	$15K	Demonstrated the installation and effectiveness of infra-red heaters and heat mats to solve strut arm icing problems.
Emsworth Lock and Dam, Ohio River	$60K	Demonstrated installation and utilization of DCP and time-lapse video camera.
Racine Lock and Dam, Ohio River	$40K	Demonstrated installation and utilization of DCP.
Racine Lock and Dam (Mid-pool), Ohio River	$75K	Demonstrated installation and utilization of hydrologic and meteorologic DCP as well as sonar device to measure ice thickness.
Montgomery Lock and Dam, Ohio River	$40K	Demonstrated installation and utilization of DCP.
Meldahl Lock and Dam, Ohio River	$40K	Demonstrated installation and utilization of DCP.

* Unless indicated otherwise, represents an approximation of dollars spent in FY 85.

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Ice Engineering

Salmon River, ID	$40K	Demonstrated the emplacement and effectiveness of wire screen to collect frazil ice.
Connecticut River, Norwich, VT	$5K	Demonstrated methods to protect piers against ice uplift forces.
Oil City, PA	$3K	Demonstrated effectivenss of an ice boom to alleviate ice jam related flooding.
Lancaster, NH	$1K	Demonstrated the effectiveness of a weir as an ice control structure.

Environmental Impact

Tennessee-Tombigbee Waterway	$21K	Demonstrated restoration techniques in borrow areas and construction sites.

* Unless indicated otherwise, represents an approximation of dollars spent in FY 85.

AUTHENTICATION: William R. Martin DATE: 20 February 1986

REAUTHENTICATION: Dr. William E. Roper DATE: 21 February 1986

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INVOLVEMENT OF CORPS LABORATORIES IN TECHNOLOGY TRANSFER

General HATCH. We want to generate the use of the technology that is developed. We are basically working with WES——

Mr. WATKINS. But we have four major laboratories, and I don't think they have been directed to try to work with Rural Enterprises to the degree that I would like to see, as far as trying to get technology transferred to business people, to farmers, to ranchers, to other groups in the small rural communities. I mention that because, if you reflect on that, most of that is technology dissemination, but it is not the technology transfer.

I don't know if am making myself clear between those two distinct situations. I think we do preparation of data and disseminate that information, but we don't make an effort to provide a transfer means of getting more people involved in trying to utilize that technology—not just receive a leaflet and say, "That's good stuff," but actually people in the small business world, in farming and small industries, having access to it and someone working with them. So I wanted to ask you to get the other laboratories involved. WES, I think, is basically doing a good job on that. Dr. Roper may want to make a quick comment on it.

Dr. ROPER. I appreciate your comments, and I want to emphasize that we are continuing to put a lot of emphasis on technology transfer. The contractor from Rural Enterprises has visited all four laboratories, and we have asked all of the labs to identify every project that they are working on, that the laboratory feels has some potential as a technology transfer item. The Rural Enterprise people sat down with each lab and went through that list of potential projects and identified from that list those that they felt had potential.

The contract is managed through the Waterways Experiment Station, and most of the day-to-day contact, as far as contract management is concerned, is with the Waterways Experiment Station, but the other labs are also involved. But I will again go back and make sure that they are participating.

Mr. WATKINS. I will follow up, too, on the other end, to see. There may be a little more involvement there than what I saw during my initial discussions with them. We are trying to get central utilization of Federal technology more involved in it than just from the dissemination of technology information.

CORPS WORK WITH FOREIGN COUNTRIES

Let me ask you a question yesterday I was asking of Secretary Dawson. I was quite concerned. As my good friend from Indiana said, at a time of austerity when we don't have enough dollars to even try to take care of the commitments we have made to our local people, we see that the policy is highlighting what we are going to be doing overseas in this coordinated effort.

Let me assure you I have got some people down in my home area that I alluded to yesterday, that are beginning to bear arms because of their feeling of a lack of compassion by our Government, for not going through with agreements.

I would like to have reported to the subcommittee the total number of dollars that the Corps on the civilian side is spending

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overseas, whether that be for travel or consultant work, planning, designing, construction. You said that you're not doing any actual work from the Corps on any particular project overseas. Is that correct?

General HATCH. There is no specific project underway at this time that we are actually working, except winding down the Saudi Arabia work, which is really a foreign military sales case, so that's not a specific project at all.

Mr. WATKINS. Would you mind listing that, basically how much in dollars were expensed on that project?

General HATCH. Would you like perhaps just the last fiscal year and this fiscal year?

Mr. WATKINS. I think so—that would be sufficient.

[The information follows:]

CORPS OF ENGINEERS CONSTRUCTION WORK IN SAUDI ARABIA

Under the Foreign Military Sales Program administered by the Defense Security Assistance Agency, the Corps of Engineers has managed military construction for the Saudi Arabian Government amounting to $825.4 million for FY 1985. The estimate for FY 1986 is $283.9 million; and for completion in FY 1987, $10.2 million.

Mr. WATKINS. How much do you expend with the State Department on projects? Are you working on projects with the State Department?

General HATCH. Actually most of our work overseas is under the auspices of another agency and hence is not funded through our Civil Works Program.

Mr. WATKINS. Give us those that you are working on overseas and what basically those dollars are with the others, whether it is State Department, AID, or some of the others. You know, I think the basic program is needed and all that but, again, it's kind of tough when you look your people in the eye and say, "We can't do this for you but we're doing it overseas." It's kind of like the President's budget, when there is an increase in foreign aid and when we're cutting Soil Conservation and Vocational Education by 50 percent. It's kind of hard—but I think Mr. Myers agrees with us when we're talking about this—whether it's in Indiana or Oklahoma, it's kind of hard to explain that to people.

[The information follows:]

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ARMY NON-MILITARY INTERNATIONAL ACTIVITIES

The following summary of Department of the Army non-military international activities, for periods as indicated, is divided into three broad categories: (I) Technical assistance for developing countries in water and related land resources, which is fully reimbursed by the foreign government involved, by the international organization involved, or by the authorized foreign assistance program of another U. S. Government agency; (II) Activities under mutually beneficial scientific and technological cooperative agreements between the Department of the Army and foreign governments, which directly benefit the U. S. domestic Civil Works program of the Corps of Engineers; and (III) Other.

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I. Non-Military International Technical Assistance Provided by Army Corps of Engineers and Reimbursed by Other U. S. Government Agencies, International Organizations, or Foreign Governments. *

Country	Date	Project	Source of Funding	$
AFRICA				
AID countries (Cameroon, Kenya, Senegal, Somalia, Sudan, to date)	84-Present	Computer Aided Cost Estimating System for construction projects.	AID	40,000
Niger Basin Authority (Benin, Cameroon, Chad, Guinea, Ivory Coast, Mali, Niger, Nigeria, Burkina-Fasso)	80-Present	River systems analysis of Niger River (2 employees in Niger, backup in Vicksburg, MS).	AID	1 mil. (4.5 mil., next 3 years)
Sudan	81-85	Advice on sediment and debris problem at power plant intakes of El Roseires Dam on the Blue Nile. Served as Sudan's/AID's design and contract agent for procuring dredge and other equipment.	AID	295,000
Swaziland	81-85	Review of studies prepared by consultants for development of river basin shared with Republic of South Africa.	Swaziland	65,000

KEY: AID - U. S. Agency for International Development, International Development Cooperation Agency, Department of State
TDP - U. S. Trade and Development Program, International Development Cooperation Agency, Department of State
UN - United Nations
USIA - U. S. Information Agency

* Non-military technical assistance provided by the Army Corps of Engineers which is reimbursed directly by foreign governments is generally provided under Section 607 of the Foreign Assistance Act of 1961, as amended (22 USC 2357), after approval by the Department of State.

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Country	Date	Project	Source of Funding	$
ASIA				
Bangladesh, Burma, People's Republic of China, Indonesia, Malaysia, Pakistan, Philippines, Sri Lanka, Thailand	84-85	Inland Water Transport Study, 9 S.E. Asia countries.	UN	90,000
India	85	Ganges River cleanup.	AID	10,000
	85	Mathematical modeling and computer application to water resource projects.	UN	9,000
Japan	84-85	U. S. Pavilion at World Trade Fair, construction management.	USIA	150,000
People's Republic of China	79-Present	Activities under 1979 Science and Technology Agreement (Hydropower Protocol), technology exchange in hydropower, flood control, estuary regulation, navigation, training, and laboratories.	People's Republic of China/TDP	320,000
Thailand	85	Advice on drainage and flood control in Bangkok.	AID	18,264
LATIN AMERICA				
Mexico	85	Computerized Beach Profile Analysis.	Mexico	13,000
Panama	84-85	Construction and disposal methodology for widening canal.	Panama Canal Commission	155,000

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Country	Date	Project	Source of Funding	$
MIDDLE EAST				
Saudi Arabia	83-85	Port aspects of study of future infrastructure needs for U. S.-S. A. Joint Commission on Economic Cooperation.	Saudia Arabia	49,000
OTHER				
Italy	85	Advice on floodplain management.	Italy	21,500

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II. Activities under Mutually Beneficial Scientific and Technological Cooperative Agreements Between the Department of the Army and Foreign Governments.

A. Army Cooperative Research and Development (R&D) Agreements with Foreign Governments that Directly Benefit U. S. Civil Works Programs (Under Direction of Other U. S. Government Agencies).

1. Environmental Protection Agency (EPA)-Japan: Agreement between the United States of America (EPA) and the Government of Japan on Cooperation in the Field of Environmental Protection (signed in 1975) - Army Corps/Japan Memorandum of Understanding (MOU) on Management of Contaminated Bottom Sediments (1978).

   a. Costs: Sponsorship of annual meetings to exchange technical and scientific information among U. S. Government agencies and Japan; $1,000 per year for translator, plus official travel and labor costs.

   b. Benefits: Saved $250,000 by obtaining Japanese data on resuspension of solids by conventional dredges for Dredged Material Research Program; saved $1,000,000 by using Japanese test results and data relating to dredging of contaminated sediments; saved $1,000,000 by using the Japanese anti-turbidity overflow system for enhancing water quality during hopper dredge operations; saved $2,000,000 by using Japanese technology for treatment of highly contaminated dredge material.

2. Department of Housing and Urban Development (HUD)-U.S.S.R.: Agreement between the United States of America (HUD) and the U.S.S.R. on Cooperation in the Field of Housing and Other Construction (signed June 1974; extended in 1979 and 1984) - Army Working Group Protocol on Construction under Complicated Climatic and Geological Conditions (signed May 1985).

   a. FY 84 and FY 85 Costs: $10,000 for travel to U.S.S.R. to participate in Working Group sessions of U. S./U.S.S.R. agreement for Cooperation in the Field of Housing and Other Construction.

   b. Benefits: The U.S.S.R. is ahead of the U. S. in practical experience in cold regions because of active involvement in construction and engineering for the past several decades. Although U. S. efforts to date have been military funded, and therefore intended primarily to benefit the Corps' military research, development, testing and evaluation (RDT&E) programs, substantial spin-off benefits accrue to Civil Works R&D relating to improved cold regions construction practices. An important area is the improvement of foundation design in regions of significant permafrost. An additional area of Soviet expertise relates to their advanced centrifuge testing

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programs. The centrifuge modeling technique has extensive Civil Works applications, such as earthquake stability for dam safety assessment, and obtaining knowledge of their procedures will enhance ongoing U. S. risk assessment R&D. The U. S. also benefits from exchange of scientific and technological data relating to design and construction of cold regions port facilities and repair, maintenance, and rehabilitation of hydraulic structures.

B. Army Cooperative R&D Agreements with Foreign Governments that Directly Benefit U. S. Civil Works Program (Under Direction of the Army).

1. Netherlands: Memorandum of Understanding between the Army Corps of Engineers and the Netherlands Ministry of Transport and Public Works concerning Scientific and Technological Cooperation on Dredging and Dredged Material Disposal (signed April 2, 1981).

a. Costs: Funds expended under this agreement are R&D funds which would have been expended in the designated research area without the benefit of cooperative funding by the Dutch. Dutch scientists' salaries are paid by the Dutch Government; the Waterways Experiment Station (WES) of the Army Corps of Engineers provides funds for technician labor and materials. Specific costs are itemized as follows:

(1) Institute for Hydrobiological Research/WES:
FY 84 - WES costs, $16,000; Dutch costs, $18,000
FY 85 - WES costs, $25,000; Dutch costs, $10,000

(2) Netherlands Organization for Applied Scientific Research/WES:
FY 85 - WES costs, $80,000; Dutch costs, $25,000

b. Benefits of U. S./Dutch Cooperative R&D: The data and information for each dollar spent; cost of R&D is about 1/2 cost of similar R&D in U.S.; takes advantage of existing Dutch data, allowing much larger data set than WES data alone; Army Corps R&D projects on "Long-term Effects of Dredging Operations" and "Field Verification" benefit from enhanced test results due to sharing of advanced Dutch technology; application of advanced Dutch techniques to U. S. environmental problems.

III. Other.

A. Foreign Research and Development Contracts (General Investment Research and Development Funded).

1. England: WES contract with University College London to develop directional shear cell to measure strength of sand/silt soils.

a. Costs: $75,000.

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b. Benefits: Aids research on mechanical behavior of soil and evaluation of math models; applicable to Corps projects where accurate strength determinations are required for design.

2. England: WES contract with Cambridge University for earthquake model tests in its centrifuge for seismic simulations.

   a. Costs: FY 83-86 - $140,000.

   b. Benefits: Seismically induced settling is potentially very damaging. At present, there are no verified methods of seismic settling analysis. Results of these unique series of tests will have specific application to the Corps geotechnical R&D and projects (dams, buildings, etc.) involving blast, vibratory, and earthquake phenomena and behavior.

3. Italy: WES contract with Technical University of Turin (Italy) to investigate feasibility and develop technology for tests of construction materials.

   a. Costs: $50,000.

   b. Benefits: Will provide U. S. with a new technology for laboratory calibration of devices used for in-place measurements of the stability of sand-soil fill structures, which is more economical and reliable than the use of field calibration techniques.

4. France: WES contract with Compagnie De Prespection Geophysique Francaise (France) to assess state-of-the-art application of microgravity to investigation of existing structures (roads, levees, railways, and dams).

   a. Costs: $50,000.

   b. Benefits: The final report documenting unique capabilities of the French techniques (including case histories) will benefit U. S. Government by illustrating more cost-effective ways to investigate existing structures.

5. Canada: WES contract with University of British Columbia on earthquake engineering and dynamic effective stress analysis.

   a. Costs: $10,000.

   b. Benefits: Unique knowledge and capabilities not available in U. S. fill gaps in areas of earthquake engineering and dynamic effective stress behavior analysis, resulting in improved design practices for Corps structures.

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5. Multinational: Technical assistance from internationally renowned experts, invited to review WES earthquake engineering R&D programs.

   a. Costs: $10,000.

   b. Benefits: Improvement of Corps R&D programs by enhancing technical quality, and reducing costs of both the R&D project itself and subsequent projects designed using R&D results.

B. U. S. Representation on Multinational Committees.

1. International Association for Hydraulic Research; Laboratory Wave Measurement Committee (U. S./West Europe/Canada/Japan):

   a. Costs: $2,000.

   b. Benefits: U. S. input to setting of international standards for lab conditions.

2. U. S. - Japan Cooperative Plan in Natural Resources; Panel on Wind and Seismic Effects (Three Army Corps Members):

   a. Costs: $15,000 per year.

   b. Benefits: Exchange of valuable scientific and technological information.

3. WES Participation in 11th International Conference on Soil Mechanics (San Francisco, August 1985):

   a. Costs: Reimbursed by conference registration fees.

   b. Benefits: WES Publications Committee collected, edited, and prepared for publication the six-volume proceedings; and assisted in other conference management. These efforts enhance the technical expertise of the WES staff, and reflect favorably on the image and reputation of U. S. scientists within the international technical community.

4. Participation on International Standards Organization (ISO): Chief of WES Structures Laboratory serves as the American National Standards Institute (ANSI) representative on ISO, responsible for developing international specifications and test methods for Portland Cement Concrete.

   a. Costs: $4,000 per year.

   b. Benefits: Reduced costs for U. S. military and private industry when bidding on foreign projects achieved through influencing selection of international specifications.

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5. Participation in the Permanent International Association of Navigation Congresses (PIANC):

   a. Costs: $70,000 per year (covering expenses associated with participation in Working Groups of Permanent Technical Committees, sponsoring regional technical seminars and workshops, and the printing and distribution of technical reports prepared by the organization).

   b. Benefits: PIANC is the world's oldest and largest international engineering/scientific organization concerned with inland and marine navigation. Army participation provides knowledge and experience that is very helpful in the planning, construction, and maintenance of Civil Works projects in the U. S.

C. Attendance at Conferences.

1. Participation in International Societies and Symposia Relating to Concrete R&D:

   a. Costs: $20,000 per year.

   b. Benefits: Participation permits Corps to stay current on international breakthroughs in engineering design, construction, repair, and rehabilitation, and materials technology.

2. North Sea Coastal Engineering Group: Bi-annual meeting on current R&D and cooperative efforts.

   a. Costs: $1,500 biannually.

   b. Benefits: Army Corps obtains up-to-date review of most European coastal engineering R&D developments. Works on mutually-beneficial solutions to technical problems.

3. European Wave Modeling Group: WES sits in on common market activities to develop new level of wave prediction technology. Annual meetings.

   a. Costs: $2,000 per year.

   b. Benefits: U. S. obtains latest R&D results for no cost. No U. S. studies of this kind, although important to improvement of U. S. wave prediction techniques for enhanced design of coastal and off-shore projects.

D. Cooperative Training Programs.

1. Waterways Experiment Station:

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a. Visits of Foreign Nationals:
FY 80-85: 2,851 individuals.
Costs: Variable, depending on nationality.

b. Long-term training of Foreign Nationals:
FY 80-85: 75 individuals.
Costs: Variable, depending on nationality and project.

2. Cold Regions Research and Engineering Laboratory:

a. Foreign travel for technical discussions on R&D (non-conference):
FY 83-85: 7 visits.
Costs: $16,750.

b. Visits of Foreign Nationals:
FY 83-85: 16 individuals.
Costs: $20,000.

c. Long-term training of Foreign Nationals:
FY 83-85: 9 individuals.
Costs: Variable, depending on nationality and project.

E. Miscellaneous.

1. Cost-Free Data Exchange with Japan:

a. Army Corps of Engineers has benefited from the exchange of information on earthquake motions. Hundreds of Japanese records have more than doubled U. S. inventory of strong-motion data, allowing development of better prediction of earthquake effects at engineering sites.

b. Army Corps of Engineers has obtained information on Japanese technology and design practices for breakwaters and jetties for use in preparing an engineer manual.

2. Collection of Earthquake Engineering Data: Earthquake engineering field data collected from various nations throughout the world to develop criteria for recognizing earthquake source zones. Site-specific data acquired from Australia, China, Italy, Bulgaria, Nicaragua, Guatemala, Ecuador, Japan, Argentina, and Mexico.

a. Costs: Earthquake Engineering Research Institute, National Academy of Sciences, Organization of American States, and Army contribute about $3,000 per data collection event.

b. Benefits: Improved criteria for recognizing source zones, and developing maximum earthquake force predictions.

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3. Civil Works Engineering Response:

   a. WES assistance on Peruvian flood control and river regulation:
   Costs: AID - $2,600; Army - $7,700.

   b. WES assistance in Puerto Rican landslide rescue efforts (seismic monitoring):
   Costs: FY 85 - $20,000 Army

4. Army Corps of Engineers International Exchange of Scientific and Technological Information:

   a. Costs: FY 87 - $25,000.

   b. Benefits: By far the greatest benefit for the Army Corps of Engineers is the obtaining of results and information developed by researchers in other countries which apply directly to current research and development needs in the U. S. Throughout the fields of water resources, cold region processes, geotechnical investigations, and many others, innovative and advanced technologies are being developed by scientists and engineers outside the U. S. Through written and oral exchange of data, reports, papers, etc., the Civil Works research and development community maintains its awareness of such advances and seeks to apply latest results to improve Civil Works methodologies. Thus, costs for this effort are largely for translation of technical guidance and results into English, preparation and distribution of the information, and extraction of appropriate material from international publications. In addition, by sharing results of both U. S. and international experiences, the need for costly duplicative experiments, tests, and report preparation is obviated, and a spirit of cooperative responsibilities produces higher quality and more cost-effective technical output. Specific examples of international cooperation on research and development activities were listed previously. This effort seeks to capitalize on international, technologically sound opportunities for application to Civil Works research and development programs as they develop.

5. Department of State/Department of the Army Study on Alternatives to the Panama Canal: Five-year study commission on alternatives to the present Canal (1984 to present).

   Costs: $110,000 per year.

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ECONOMIC DEVELOPMENT COMPUTER MODELS

Mr. WATSON. Let me mention one other thing, and that is on economic development. I have been following closely the development of a computer model on economic development through the Corps, and working to expand that economic development through the Tulsa District of the Corps in my area. I have said it looks like it's going to have some good data and provide us some good economic development thrust.

I don't ask for really any in-depth data on that. I would just like to say that they are indicating that they could probably use a little more money if we can get this thing on board and working. If I have to try to make a choice between its going over there or over here, I sure want to try to elevate that economic development and that computer model that we're working with, and make that more functional for our area.

You know, it's amazing. I have 20 counties, and 18 of my counties have lower income than Hong Kong. It seems like that doesn't bother a lot of people around the country, but that's a pocket of poverty like the Ozarks, and the Appalachia area, and if we can increase that income level, maybe we can have more tax dollars to help more people.

But I want to pursue that computer model because I think it has some potential, and maybe try to get some additional help this year. Do you have any comment on that?

General HATCH. With currently available funds we expect to have the input-output model tested and operational by the end of the current fiscal year.

The FY 1987 General Investigations budget includes $50,000 to begin test applications of scheduling models which would assist non-Federal entities of Southeastern Oklahoma in formulating water resource budgets for achieving optimal economic impacts. If additional funds are made available, the local economic and labor force impact models developed for the Tennessee-Tombigbee Corridor Study would be transferred and tested; and initial steps in transferring and testing the industrial siting model developed for the Tennessee-Tombigbee Corridor Study would be initiated. All of the effort would ultimately result in a group of models that better integrate Federal and non-Federal investment decisions so that the desired economic impacts can be more readily achieved.

Mr. WATKINS. They are just beginning that program down there but it looks like it's got some potential.

COOPERATIVE EFFORTS WITH FOREIGN GOVERNMENTS

General HATCH. Sir, may I make just one comment?

Mr. WATKINS. Yes.

General HATCH. At the risk of running the subject of the China connection into the ground, although the reimbursable work that we have been doing—and I assume may continue, unless directed to the contrary—for other agencies such as the State Department, AID, et cetera, I would assume may clearly be categorized by anyone as aid, assistance for whatever purpose, albeit valid. On the other hand, the $250,000 which we have indicated we would propose to spend in FY 1987, I believe should be viewed solely as those

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expenses which will be associated with and incurred by mutually beneficial R and D efforts, and other scientific and technological exchange efforts, so that we can gain information and experience that will help us do a better job in our Civil Works business. That $250,000, I don't believe, when you take a look at it dollar-by-dollar could be construed as aid or assistance

Mr. WATKINS. But that $250,000 would help my district to help its economic development. Whether you want to call it aid or assistance, my undeveloped areas need a little help down there. I'm not all against what you're saying, except I've got to have some seed money, too, to try to help these undeveloped areas.

Mr. BEVILL. The Chair recognizes Mr. Rudd. We hope you are going to change your mind. Since we left here in the first session, Mr. Rudd has announced that he is not going to run for reelection. We are going to miss him.

GROUND WATER

Mr. RUDD. Thank you, Mr. Chairman. You are kind to say that. General, can you tell me what activities the Corps may be engaged in relative to the issue of ground water quantity, and particularly ground water recharging, which as you know is a very important issue in our part of the country.

General HATCH. The Geological Survey has some concern over ground water quantity in a variety of ways. The Corps, as we speak, really has no particular charter in that line, and therefore we haven't frankly engaged in R and D associated with ground water, either in a qualitative sense or a quantitative sense.

EXCHANGE OF HYDROLOGIC DATA AND TECHNIQUES WITH OTHER AGENCIES

Mr. RUDD. Well, I will tell you I am frankly very surprised that you are not thinking about it, because it is all related to water. To follow that through, in your efforts to build dams—we have been building dams for millenia—but I know with each passing year we are supposed to be getting a little smarter with each thing that we do. Do you have any organization within your organization—a task force, if you will—that exchanges data on the advancement of hydrological techniques with other agencies, and specifically with BuRec, for example?

Dr. ROPER. Through the biennial Interagency Research Coordination Conference, in which we participate jointly with TVA, BuRec, and Bonneville, some of this subject is discussed. Also, the Corps participates as a liaison member to the Water Science and Technology Board of the National Academy of Sciences, which does address ground water issues. From a scientist-to-scientist communication standpoint, members of our laboratories participate in various technical meetings, groups, task forces on ground water —

Mr. RUDD. You do have a laboratory?

Dr. ROPER. The Waterways Experiment Station is our primary water-related laboratory. However, all our other laboratory and research organizations have water-related responsibilities also. We do have two small research work units that address water supply planning, ground water, recharge, and conjunctive use. These stud-

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ies are assessing analytical techniques and concepts for performing groundwater analysis. These efforts will provide guidance to the Corps in planning and evaluating surface and ground water supply alternatives. This work is being done by our Institute for Water Resources at Fort Belvoir, Virginia. I would also add that a number of our engineers and scientists do participate in technical meetings with other government agencies, task forces, and working groups that are involved with ground water issues.

Mr. RUDD. The general reason I am asking these questions is this: I think in 1979 and 1980, along in there, specifically in Arizona, for example—I know this happened on the West Coast, too, we were out there looking at some of the storm damage and flood control projects and that sort of thing—but there were three storms that hit almost simultaneously in Arizona, and had the third storm hit exactly where the other two hit, a big dam we had out there presumably could have been overtopped. It could have been overtopped and presumably broken and caused extensive damage below. It didn't quite happen that way but it upset a lot of people.

The Corps made a new projection, changing their estimates and projections of damage, of what was possible. BuRec made one and the other people made one, and they were completely out of line, I think, if you will pardon me, with what the facts really were, because everybody was excited. They projected enormous figures that it doesn't look like it could ever quite reach. Since that time there has been some rethinking about the subject. There was a gentleman named Erickson—I hope you don't dislike him or anything like that—I don't know him personally but I know he made an estimate that was accurate, and he has done some very accurate things since then that seem to be more in keeping with what the realities were.

This is not in the way of criticism at all. It is just that as we go along in hydrological advancement, if you will, in technique and that sort of thing in the construction of flood control projects and water conservation projects and that sort of thing, do you have a ready ability for exchange of advanced information which you may hear with other agencies, in order for everybody to find out what the other guy is doing so that you are all working for the same object, to serve the people of the United States? Do you have an ability to do this? Do you have a task force that you appoint to get involved in this sort of thing, for the exchange of information to better your own operations in all of these areas? That was the reason for my other question about it.

General HATCH. Sir, I believe the mechanisms that Dr. Roper described in a large measure do that. Whether it's 100 percent satisfactory, I wouldn't be able to say. It's actually our own internal management within the Corps of the R and D program, our leadership, our own leadership insists that that be done. We are looking for ways to cut down his budget, and one way to do that is for him to prove to us that he in fact has gleaned everything he possibly can from other agencies, which we in turn expect him to share with other agencies, and hence glean the maximum benefits for the R and D dollar we give to our R and D labs. I believe we are pretty good at that.

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SITE-SPECIFIC GROUND WATER STUDIES FOR INDIVIDUAL PROJECTS

Getting back to your ground water subject area, however, perhaps that has been a bit thin at this time, at least, because of our lack of charter. We do ground water studies, however, on a site-specific basis for given projects. If there are ground water implications, we do get involved in that, and therefore we have some expertise in the ground water business but not an overall ground water program.

Mr. RUDD. Well, you have got to have some money in the pipeline that you could use for these projects, and I hope you will consider that carefully. It's a request I am going to make a little bit later on. I do hope that you will give some consideration to perhaps establishing some sort of a task force on that. I thank you very much.

Thank you, Mr. Chairman.

Mr. MYERS. Dr. Roper had something to say.

Mr. RUDD. I'm sorry.

HYDROLOGIC ENGINEERING CENTER COMPUTER MODELS USED BY OTHERS

Dr. ROPER. Just one thing. Our Hydrologic Engineering Center in Davis, California provides Corps support in surface water hydrology. Their capabilities are also available through an information exchange service to a broad number of agencies. Computer models they have developed are now being used by many other agencies, and are available on a time-share basis. This is an example of the kind of close cooperation we do have between the Corps and other agencies in the areas where we have a major mission.

GROUND WATER RECHARGE

Mr. RUDD. On the subject of ground water recharge, I don't want to prolong this, but different areas have different capabilities, obviously. There are several ways to advance in a general way whether or not an area has a capability, either due to the porous nature of the ground or the nature of the surrounding areas of the environment, all of that, and I don't know that anybody has ever attempted to make such a determination. What they do is, they build a ground water recharge facility and hope that it works, and if it works then they know they have been successful. If it doesn't, they say something went wrong but they don't know what. If we had a way to determine the viability of such an operation in advance, at least to some extent, it would be very helpful and it would save a lot of the taxpayers' money and also provide an incentive to do or not to do exactly what we need. Thank you.

Thank you, Mr. Chairman.

Mr. BEVILL. Are there any other questions?

TICK RESEARCH

Mr. WATKINS. One other question.

Have you checked on tick research? We are making a little progress on that. I know we entered into an agreement with the

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Agricultural Research Service. Do they need some additional money?

General HATCH. No requirement for additional money. We have $55,000 in our 1987 request for that purpose. In coordination with the Agricultural Research Service, we have suggested the recreation area at Sardis Lake as the best location for that research project. In FY 1985, we used $90,000 for this program; in FY 1986 we will use $55,000; and in FY 1987 we expect to use an additional $55,000 to complete this research.

Mr. WATKINS. You know, if we can work this thing out it will mean a great deal. One of the purposes of the lakes happens to be recreation, but many of them in some of the areas of southeast Oklahoma, north Texas, Louisiana have a tick problem so I encourage that to continue.

General HATCH. We are specifically targeting the Lone Star tick and the American dog tick.

Mr. WATKINS. I think you're right on target.

Mr. BEVILL. Any other questions?

REMOTE SENSING AND SURVEYING VIA SATELLITES FOR LOCATING SUITABLE GROUND WATER RECHARGE SITES

Mrs. BOGGS. May I ask a question?

I was just wondering about your ground water studies. There are two things that attracted me. One was the satellite positioning surveys that you make for locks and dams and so forth. In St. James Parish, in our area, the president of the parish uses Landsat satellite to position his roads, his fire hydrants, his runoffs, and so on. Would that be a logical way of trying to locate the proper place to put a rechargeable ground water installation?

Dr. ROPER. One of our laboratories, the Engineering Topographic Lab on the military side, is using satellite systems for determining areas that have high potential for water resources, that type of thing, so there may well be some crossover there.

SATELLITE SENSING FOR LOCATION AND EVALUATION OF WASTE DISPOSAL SITES

Mrs. BOGGS. Another area I was thinking about was your work with EPA in the Superfund, the cleanup of waste disposal sites and the location of others, and the types of methods that should be used within them. Certainly the consideration of ground water is always a very solid consideration there. Could some of that technology be transferred over to the type of thing Mr. Rudd is talking about?

Dr. ROPER. Yes, I think it definitely could.

Mr. BEVILL. All right. The committee, we each of us have other questions, written questions, we will submit to be answered on the record.

[The questions and answers follow:]

GENERAL INVESTIGATIONS

STREAM GAGING—TRANSFER OF FUNDS TO THE U.S. GEOLOGICAL SURVEY

Mr. BEVILL. How many stream gages need to be replaced as a result of floods?

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General HATCH. About 20 gages will require full replacement due to recent floods, but many of the approximate 10,000 gaging sites used by the Corps will require significant repair. All require maintenance.

HYDROLOGIC STUDIES

Mr. BEVILL. In regard to General Hydrologic Studies describe the "foothills of Colorado" study, explain why it is unique. Why does it take in excess of seven years to accomplish this study?

General HATCH. The study is unique in that very little is known about hydrology in the foothills. Hydrologic records indicate a very poor correlation between rainfall and runoff. The test site consists of a high density of gages in an effort to understand the phenomena, so that this knowledge can improve streamflows models. It is also unique in that this study represents a cooperative effort among Federal, State, and local governments.

The study was envisioned as a 15-year study, with the major portion of time required for data collection over a long enough period to provide for an analysis and a subsequent conclusion that would be statistically valid. Since the amount of the funding has been less than planned, the time period may need extending.

COASTAL FIELD DATA COLLECTION PROGRAM

Mr. BEVILL. I note the Coastal Field Data Collection Program has been reorganized from seven subitems to four subitems. Was this done to promote efficiency, to save money, etc.?

General HATCH. The Coastal Field Data Collection Program was previously comprised of seven subitems: Wave Information Study; Field Wave Gaging Program; Coastal Imagery Data Bank; Inner Continental Shelf Sediment Study; Littoral Environment Observation Program; Shore and Beach Information; and Rapid Measurement of Damage to Coastal Projects from Major Storms.

A reorganization of the program was undertaken to maximize the effectiveness of the critical subitems through the elimination of lower-priority, unfunded subitems and consolidation of similar efforts. With those goals in mind, two subitems were eliminated. These were: Coastal Imagery Data Bank; and Inner Continental Shelf Sediment Study. Neither of these subitems had been funded for several years and were of too low priority to receive support under the projected program budget. Another effort, Rapid Measurement of Damage to Coastal Projects from Major Storms, was combined with the Littoral Environment Observation Program and the Shore and Beach Information subitem to consolidate these similar efforts. Finally, because of the extensive data being collected, a subitem called Information Management was created to develop access to program results for all Corps of Engineers Field Operating Agencies. The final list of subitems, which reflects funding of the priority efforts, consolidates similar efforts, and provides for information management is: Wave Information Studies; Wave Gaging; Beach and Nearshore Data; and Information Management.

TRANSPORTATION SYSTEMS

Mr. BEVILL. How will the $100,000 proposed increase for transportation systems be used?

General HATCH. The $100,000 increase is required to begin a national data base on performance of completed navigation projects. The data will be useful to: the Districts doing multiport evaluation; making operating decisions; and public and private parties interested in evaluating navigation program output. It will provide the data, currently either uncollected or not aggregated, in a fashion which will enable the Corps to more clearly explain the value of the navigation systems which we plan, construct, and maintain.

ENVIRONMENTAL DATA STUDIES

Mr. BEVILL. The average allocation during FY 1982–1986 for Environmental Data Studies is $200,000. Why is it essential to increase the program funding to $235,000 in FY 1987?

General HATCH. The program has been level funded at $200,000 since its inception in Fiscal Year 1982, and that figure was one-half the initial request of $400,000. Inflation during and since 1982 has steadily diminished what can be accomplished, causing some work to be deferred to later years. The additional $35,000 in Fiscal Year 1987 would correct that slippage. In Fiscal Year 1987 it would primarily be used to further the use of available environmental data by both the Corps and local

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interests under the arrangements evolving with the new requirements for planning study cost sharing between Federal and non-Federal sponsors. Thorough use of such environmental data is important in demonstrating compliance with Federal environmental statutes, and avoiding delays caused by allegations of non-compliance.

RESEARCH AND DEVELOPMENT

Mr. BEVILL. Last year Congress provided $19 million for the Research and Development program. What is the basis for allocating $20 million in FY 1986?

General HATCH. When we determined there was an actual slippage in other General Investigations items, we considered it prudent to increase the GI-R&D allocation for FY 1986 by about 5 percent, to partially restore it to the average annual level that had been maintained over the previous five years, without factoring in the effects of inflation, and still remaining lower than the FY 1986 budget request of $21,500,000.

COASTAL ENGINEERING RESEARCH

Mr. BEVILL. The largest increase, $750,000, is requested for Coastal Engineering. Specifically, how will the increase be used?

General HATCH. The Coastal Engineering Research Area consists of the following four programs, for which I will indicate the respective Fiscal Year 1986 and Fiscal Year 1987 funding levels and the net differences: Coastal Flooding and Storm Protection, Fiscal Year 1986 $1,700,000, Fiscal Year 1987 $2,020,000, an increase of $320,000; Harbor Entrance and Coastal Channels, Fiscal Year 1986, $700,000 Fiscal Year 1987 $895,000, an increase of $195,000; Shore Protection and Restoration, Fiscal Year 1986 $1,590,000, Fiscal Year 1987 $1,565,000, a decrease of $25,000; and Coastal Structures Evaluation and Design, Fiscal Year 1986 $1,390,000, Fiscal Year 1987 $1,650,000, an increase of $260,000; with a total increase of $750,000.

In the Coastal Flooding and Storm Protection program, increased funds will support expanded use of the unique Coastal Engineering Research Center's Field Research Facility by the Corps and several other agencies and universities, particularly during the large, international coastal processes experiment next Fall. Additional funds will be used to design and improve instruments for measuring coastal forces, including winds, waves, storm surges, etc. Finally, emphasis has been increased on the documentation of recently developed numerical models of coastal phenomena, making them more user-friendly, enhancing their use by Corps field offices and contractors, and reducing the costs of coastal projects.

In the Harbor Entrance and Coastal Channels program, increased funds will support analysis of wave statistics in high current areas such as harbors, river entrances, and inlets, to improve our understanding and prediction of wave conditions affecting dredging, vessel safety, and sediment movement. We will also be testing a new technique for predicting longshore currents due to waves and winds which will improve coastal engineering technology.

Finally, in the Coastal Structures Evaluation and Design program, the major increase in funds will support initiation of improved design of revetments and seawalls using advanced laboratory facilities. New work will also be initiated in the laboratory to study wave impact forces on breakwater armour units, to complement an ongoing field study. Work will also begin on techniques for the design optimization of coastal structures.

ENVIRONMENTAL QUALITY RESEARCH

Mr. BEVILL. Under the Environmental Quality program, explain the accomplishment of "restoring soils and ground cover disturbed by construction". Do you mean planting grass?

General HATCH. Under normal conditions, the reestablishment of vegetation at construction sites to prevent soil erosion and assure acceptable runoff water quality is not difficult and much information is available. However, construction frequently involves problem soils that are, for a variety of reasons, difficult to revegetate. The Waterways Experiment Station has just completed an instruction report summarizing the best available technology for handling such problem areas, information that was not previously available in compiled and evaluated form. The manual includes guidance on selecting appropriate strategies and step-by-step instructions for implementing selected techniques, including site preparation, soil stabilization, plant selection of not only grasses, but also woody shrubs and trees, and maintenance requirements. Use of this guidance by Corps Field Operating Agencies and other agencies will greatly reduce the number of unsuccessful attempts to stabilize construction sites, thereby reducing total project costs and enhancing environmental quality.

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CONSTRUCTION, GENERAL

CONTINUING AUTHORITIES PROGRAMS

Mr. BEVILL. What is the status of the small projects added by Congress last year?

General HATCH. There were fifteen such projects specifically cited for funding under the Continuing Authorities Program by Congress for Fiscal Year 1986. Four of the projects are available for construction in Fiscal Year 1986. The other eleven projects are now in the planning stages and should be available for construction in Fiscal Year 1987.

DAM SAFETY ASSURANCE PROGRAM

Mr. BEVILL. The budget request for the Dam Safety Assurance Program is $21 million, an increase of $17 million over FY 1986. How many dam safety studies are currently underway?

General HATCH. From the over 600 dams constructed by the Corps of Engineers, 36 dams were identified as candidates most likely to require remedial action under the Dam Safety Assurance Program. Six of the 36 dams are now in construction status and one of the 36 dams has since been determined to not need modification. Dam Safety studies are underway on the 29 dams remaining on the list of candidates most likely to require remedial action.

Mr. BEVILL. When will Congress be notified as to which dam safety projects will proceed in FY 1986 and FY 1987?

General HATCH. Congress will be notified as to which dam safety projects will proceed in FY 1986 and FY 1987 upon approval of each individual study. We anticipate that studies will be completed and decisions made on whether to proceed with construction on seven projects in FY 1986 and eight projects in FY 1987.

OPERATION AND MAINTENANCE, GENERAL

MONITORING OF COMPLETED COASTAL PROJECTS

Mr. BEVILL. The Monitoring of Completed Coastal Projects program justifications indicate a five-year allocation of $876,000. Why is it necessary to increase this program to $1.2 million in FY 1987?

General HATCH. The $876,000 is an average annual allocation over the period FY 1982 through FY 1986. The $1,200,000 allocation requested in FY 1987 is an increase of $200,000 over the $1,000,000 allocation in FY 1986. There are 12 monitoring programs underway in FY 1986, five programs are being completed, three are continuing, and four are starting. Typically, close-out and start-up years are relatively low funding years for a monitoring study, with the bulk of funding occurring during the intervening years. There are five continuing studies for FY 1987 with two completions and two startups scheduled. The additional $200,000 is required to carry out the scheduled program. The Monitoring of Completed Coastal Projects Program is focused on measuring physical changes in coastal conditions and processes after the initial construction of a coastal project or major modifications to an existing project. It is therefore important for the monitoring effort to start as soon after work is completed as possible. When changes during construction are deemed important, such as the measurement of scour during construction, it may be necessary to start the monitoring effort prior to completion of construction. Scheduling and budgeting are aimed at taking advantage of "targets of opportunity." Delays or budget cuts mean "lost opportunities," not just reduced effort or prolonging the program.

REPAIR, EVALUATION, MAINTENANCE, AND REHABILITATION

Mr. BEVILL. As shown on page 64, the total program cost (Fiscal Years 1984–1989) for Repair, Evaluation, Maintenance, and Rehabilitation Research is $35 million. Will this program be terminated at the end of Fiscal Year 1989?

General HATCH. The Repair, Evaluation, Maintenance, and Rehabilitation, or REMR, research program will be completed at the end of Fiscal Year 1989. The REMR program is proceeding according to schedule.

Mr. BEVILL. On page 67, you cite the development of a monitoring system for large hydroelectric genarators as an accomplishment. When was this system actually developed?

General HATCH. The concept for a hydroelectric generator winding monitoring system was developed by the Corps of Engineers Construction Engineering Research Laboratory during 1985. We hope the system will provide reliable indication of the condition of the generator winding to allow scheduling of maintenance, and to aid in

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deciding when to rewind the units and avoid expensive damage to generators. A prototype of the system was installed in the generators at Tenkiller Ferry Dam in September 1985. Initial evaluation was completed in January 1986. A final evalution is scheduled for April 1986. Plans are to apply for a patent for this system.

REMOVAL OF SUNKEN VESSELS AND OBSTRUCTIONS

Mr. BEVILL. The budget request for Removal of Sunken Vessels and Obstructions is $1 million in FY 1987 compared with estimated obligations of $2.3 million in FY 1986. How are these estimates determined?

General HATCH. The budget request for Removal of Sunken Vessels and Obstructions is based on expenditures for the past several years. Our average for the past few years has been decreasing.

NATIONAL EMERGENCY FACILITIES

Mr. BEVILL. What facilities are included in the estimate of $3.5 million for National Emergency Facilities as part of the National Emergency Preparedness Program?

General HATCH. Of the funds requested for National Emergency Facilities, $1.8 million will be utilized for partial operation and maintenance, as well as making necessary upgrades to existing emergency operations centers, or EOC, to meet national emergency requirements. This request would also provide for the operation and maintenance of existing permanent and interim emergency relocation sites, or ERS. The remaining $1.7 million will be utilized to undertake development of three key permanent ERS and continue planning on several others.

EMERGENCY RELOCATION SITES

Mr. BEVILL. The conference report accompanying the FY 1985 Energy and Water Development Appropriation Bill directed the Corps to prepare a detailed plan outlining the purpose, number and costs of emergency relocation sites proposed in connection with the National Emergency Preparedness Program. We will place a copy of that report in the record at this point.

[The report follows:]

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EMERGENCY RELOCATION SITE PROGRAM

Section 102(b) of Executive Order 11490 charges the departments and agencies of the Federal Government with the duty of "assuring the continuity of the Federal Government in any national emergency type situation that might confront the nation." One specific responsibility included in this charge was that "emergency relocation sites supported by communications and required services" be developed to ensure that agencies will be able to perform essential functions and continue as viable parts of the Federal Government in the event of a national emergency.

The U. S. Army Corps of Engineers (USACE) executes essential construction missions for both the military and civil sectors of the government. In the event of any national emergency scenario (terrorist, unconventional, conventional, tactical nuclear or strategic nuclear), USACE's mission will become even more critical as the Nation rebuilds. In order to provide this vital capability, USACE has developed, in connection with its National Emergency Preparedness Program, plans to develop emergency relocation sites that would ensure the survival and continued operation of essential Corps elements.

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Although contemplation of such a need may be morose, quite clearly it is better to be prepared for all contingencies than to allow fear of planning for those contingencies to paralyze us. USACE is determined that our Nation's engineering and construction capability will be available when it is most needed.

The purpose of the emergency relocation site is to provide an austere protected facility located outside of the prime target area to which essential personnel of a Corps of Engineers headquarters are moved under emergency conditions. When not needed, the emergency relocation site may be inactive or on a standby basis and may be manned to provide for the maintenance of the facility, communications equipment, and data base. It should be capable of rapid activation, supporting the requirements of the relocated headquarters for a predetermined period, and expanding to meet the post-emergency requirements of the relocated headquarters.

In short, the strategy for the development of emergency relocation sites throughout the Corps of Engineers consists of a 10-year program during which divisions and districts receive funding on a priority basis to develop and maintain their emergency relocation sites. The total estimated cost for this effort is $33 million (see Annex D). Development efforts will require the Corps elements to upgrade or develop Government-owned facilities, or, where such facilities are unavailable, to purchase and develop other facilities, to meet the established mission/design requirements.

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According to information from FEMA Publication TR-82, every USACE element is presently located within a targeted area. Consequently, each element anticipated to have an immediate post-emergency mission must develop an emergency relocation site. These efforts will establish an emergency relocation site for Headquarters, USACE and each subordinate Corps of Engineers element identified to have a mission (a total of 53 individual sites).

The construction of emergency relocation sites for the 36 Corps districts is essential since, following national emergency such as a nuclear attack on the United States, the Corps of Engineers will have a mammoth task of providing construction management support to the civil sector of government in a life-support role as well as reconstructing destroyed military targets that are vital to the continued defense of the Nation.

The 11 division headquarters need emergency relocation sites to maintain command and control. However, during the initial phases of the development efforts, divisions will share facilities with district offices where possible to ensure communications and to save the funding of separate facilities until funds become available.

Finally, the Huntsville Division and four of the Corps laboratories are anticipated to have a post-emergency mission and are planned to develop an emergency relocation site as part of this program. Their survival is essential to provide the necessary technical support to Corps in their efforts to support the Nation.

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DEFINITIONS

Continuity of Government.

All measures designated or taken to assure the continuity of essential functions of government in the event of a national emergency.

Continuity of Operations.

The degree or state of being continuous in the conduct of functions, tasks or duties necessary to accomplish a military/civil action or mission in carrying out the national military strategy. It includes the functions and duties of the commander as well as the supporting functions and duties performed by a staff and others acting under the authority and direction of the commander.

Essential Functions.

USACE functions that are considered necessary in consonance with the direction of the Department of the Army for the accomplishment of indispensable operations of USACE in national emergency situations.

Essential Personnel.

Those USACE personnel identified by each commander who are required to serve as the minimum staff for emergency relocation site operation.

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ESSENTIAL FUNCTIONS

CONTINUITY OF OPERATIONS AND CONTINUITY OF GOVERNMENT

The following are tasks expected to be performed during a national emergency by the Corps of Engineers:

a. Trans-Attack Period. The period of time from the initial attack to until civil defense personnel determine that conditions permit leaving shelters. During this period, the Corps of Engineers elements would have the following responsibilities:

(1) Under Continuity of Government.

(a) Provide emergency engineering advice and assistance to all levels of government,

(b) participate in civil defense activities.

(2) Under Continuity of Operations.

(a) Reconstitute Corps of Engineers elements,

(b) restore essential command and control communications,

(c) reestablish the line of authority,

(d) provide resources and support of military operations and/or civil authority as directed by authorized officials,

(e) conduct residual capabilities assessment.

b. Post-Attack Period - Immediate. The period following the determination that conditions permit leaving shelters. During the immediate phase of this period, the Corps elements would have the responsiblities:

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(1) Under Continuity of Government.

(a) Provide emergency construction and real estate support for all required activities,

(b) provide guidance and supervision of all activities and measures related to the water preparedness program,

(c) continue survival activities,

(d) mobilize the civilian resources,

(e) restore the essential communications and transportation systems.

(2) Under Continuity of Operations.

(a) Continue military operations,

(b) support mobilization activities if mobilization has been declared,

(c) determine requirements and initiate procurement of high priority essential items.

c. Post-Attack Period - Long Term. During the long-term phase of the post-attack period, the Corps elements would be expected to be involved with the rehabilitation, rejuvenation, and restructuring of Nation. Personnel and functions not required during preceding phases will become essential during this phase. Specific activities would include the following:

(1) Under Continuity of Government.

(a) The continued operation of the locks and dams of the inland waterway,

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(b) the continued administration of other critical civil works activities such as water resource functions and hydropower projects,

(c) the continued support in response to natural and technological disasters to the extent feasible.

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FUNDING STRATEGY

The purpose of this section is to outline the strategy to be used to fund the emergency relocation site program. This effort represents a portion of the Corps National Emergency Preparedness Program with which the Corps develops its ability to respond to various national emergencies. Generally, $3.0 million is programmed for this program each year during a 10-year period for the development of emergency relocation sites for all of the Corps subordinate elements for a projected total cost of $33 million. The funding is based upon the estimated cost of $0.05 million for the design and $0.450 million for the development/ upgrade of an emergency relocation site. However, during the first year of the program, $1.9 million additional funds are programmed for the development of the emergency relocation sites for Headquarters, USACE and the Lower Mississippi Valley Division. The estimated funding profile is illustrated in Figure 1.

The following are the underlying principles in the funding strategy for the funding of efforts by the Corps subordinate elements:

a. The operation and maintenance requirements for existing emergency relocation sites will be totally funded.

b. The available funds for development efforts will be distributed to the Corps elements in order of decreasing priority.

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c. FY 86 funding will accomplish the:

(1) Development of an emergency relocation site for HQUSACE at an estimated cost of $1.2 million. The Middle East Division (Winchester) is selecting the site and preparing plans for facility development.

(2) Construction of an emergency relocation site for the Lower Mississippi Valley Division at an estimated cost of $0.7 million. Currently, the Lower Mississippi Valley Division is preparing plans for the development of their emergency relocation site.

(3) Development of an emergency relocation site for the St. Paul District, North Central Division, by purchasing and upgrading an existing NIKE missile site at a cost of $0.45 million. Final plans for development are complete and await implementation funds.

(4) Preparation of plans and designs for emergency relocation sites at 36 Corps districts and the New England and Pacific Ocean Divisions at an estimated cost of $0.05 million per site.

(5) Funding of operation and maintenance funds for the 44 existing emergency relocation sites. The current status of the existing emergency relocation sites reflects the need for the program since generally the current sites are only designated facilities which are minimally developed at best.

d. Costs for FY 87 thru 96 include:

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(1) The development of plans and designs for emergency relocation sites at the remaining 10 Corps divisions during FY 87 and the Huntsville Division and the 4 designated laboratories during FY 88 at an estimated cost of $0.05 million per site.

(2) The development/upgrade of five emergency relocation sites per year based upon the established priority listing at an estimated cost of $0.450 million per site.

(3) The funding of operation and maintenance funds for the existing emergency relocation sites.

As actual costs of development are determined through the implementation of the program, out-year projections will be adjusted accordingly.

Since funding during the initial years will be restricted to the districts, divisions will be encouraged to collocate with a district. This restriction ensures maximum decentralized capability following a national emergency such as a nuclear attack on the United States since such operational ability may be required for an undetermined period of time. During each year of the program, a greater portion of the available annual funds will be used to fund the development of the division emergency relocation sites. The funding strategy for the division facilities will be the same as that used for the development of the district emergency relocation sites.

Additionally, as previously stated, four additional Corps elements are anticipated to have a post-emergency mission and will therefore receive funding for an emergency

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relocation site. These elements are: the Engineer Topographic Laboratories (ETL), the Waterways Experiment Station (WES), the Facilities Engineering Support Agency (FESA), and the Engineer Automation Support Activity (EASA).

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FUNDING PROFILE

	Budget Year (millions of dollars)					10 year Total
	1	2	3	4	5-10	
Office of the Chief of Engineers Emergency Relocation Site/ Alternate Headquarters Development	$1.90	$0.00	$0.00	$0.00	$0.00	$1.90
Division/District Emergency Relocation Site Development	$2.35	$2.75	$2.50	$2.25	$2.25	$23.35
Office of the Chief of Engineers/ Division/District Operation & Maintenance Costs	$0.55	$0.63	$0.70	$0.78	$0.85	$7.76
TOTAL	$4.80	$3.38	$3.20	$3.03	$3.10	$33.01

FIGURE 1

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METHODOLOGY FOR THE PRIORITIZATION OF ERS DEVELOPMENT EFFORTS

The purpose of this section is to outline the methodology used to prioritize the ERS development efforts by FOA. A method of prioritization was necessary to ensure the optimal application of funds to the most critical need.

One assumption was made at the beginning of the process. It was assumed that the relative risk at the location of the proposed FOA ERS sites would not be considered a factor in the prioritization process. This information was deemed more appropriate to serve solely as design criteria. As a result of this assumption and the consideration that all FOA required an ERS since the location of each peacetime facility was located within a targeted area based upon TR-82 published by the Federal Emergency Management Agency, each FOA could be prioritized based only upon the relative importance/volume of their anticipated mission requirements in the event of a national emergency.

To quantify the FOA anticipated mission requirements, key mission areas were identified based upon coordination with representatives from DA, DOD, JCS, and FEMA. The mission areas identified were:

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PRODUCTION BASE	INDUSTRIAL COMPLEX	MILITARY INSTALLATIONS	CIVIL WORKS KEY FACILITIES	LIFE SUPPORT
(P.B.)	(I.C.)	(M.I.)	(K.F.)	(L.S.)

After identification of the component missions that would be required in a COOP/COG environment, the missions were quantified using readily available information. Descriptions of the information used are provided in the next section.

To prioritize the FOA in terms of their relative mission requirements, the formula shown in Figure 1 was derived to produce a relative mission indicator with which to base a comparison. Each evaluation factor of the formula is multiplied by a Relative Importance Factor (R.I.F.) to reflect the relative importance of that particular mission during a COOP/COG environment.

$$(P.B.)(R.I.F._{P.B.}) + (I.C.)(R.I.F._{I.C.}) + (M.I.)(R.I.F._{M.I.}) + (K.F.)(R.I.F._{K.F.}) + (L.S.)(R.I.F._{L.S.}) = \text{RELATIVE MISSION FACTOR}$$

FIGURE 1

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The numerical values used to quantify the evaluation factors were representative fractions derived by normalizing the values within each evaluation factor category that were assigned to each FOA to indicate the relative importance of that component mission.

The resulting mathematical calculations provided a relative mission indicator for each FOA. These numbers have no value other than to rank the FOA in terms of the defined parameters for the purpose of prioritizing funding efforts.

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KEY MISSION AREA

DATA SUMMARY

The purpose of this section is to provide brief descriptions of the data used to quantify the key missions anticipated during a post-national emergency scenario. This information, as previously discussed, was used to rank order the Corps elements for the purpose of ensuring priority funding requirements were met first.

Production Base.

The production base consists of those military production facilities which the Corps would have a potential responsibility to provide construction support. Each Corps element was assigned a number which represents the total number of production facilities located within its boundaries.

Industrial Complex.

The industrial complex consists of those identified civilian organizations with existing contracts to provide support to the military during a mobilization. In the event of a national emergency, the Corps may be required to provide construction support to such organizations. Each Corps element was assigned a number which represents the total number of such organizations located within its boundaries.

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Military Installations.

The military installation mission was quantified using the number of military (Army/Air Force) installations found within the boundaries of each Corps element. The resulting figures are used to give a relative indication of the degree of Corps construction support to the military relative to each of the Corps elements.

Civil Works Key Facilities.

Civil Works key facilities are those facilities that the Chief of Engineers indicates are crucial to the national security and defense of the United States. The value assigned to any Corps element represents the number of key facilities identified within the individual Corps element's boundaries.

Life Support.

The life support mission reflects the anticipated requirement that the Corps would have to provide construction support assistance (e.g., temporary housing) to the Nation following a national emergency. The values used to quantify the expected Life Support mission were derived from information from the 1984 STATISTICAL ABSTRACT OF THE UNITED STATES (published by the U.S. Department of Commerce Bureau of the Census). The value for any Corps element represents the total population of all metropolitan statistical areas (MSA) located within the boundaries of the Corps element.

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EMERGENCY RELOCATION SITE SELECTION/DESIGN CRITERIA

The design criteria for emergency relocation site development are divided into four main categories. They are (1) geographic, (2) physical, (3) operational, and (4) support. A brief description for each of these is given below:

1. Geographic Criteria.

a. Outside Target Area. By definition, an ERS is a site located outside a prime target area to which all or portions of a civilian or military headquarters may be moved. The emergency relocation site location must provide adequate protection from blast, heat, fire, and radiation. Although no area of the United States is safe from fallout, prevailing winds and target locations provide areas with a higher probability of reduced radiological hazard in the event of a nuclear attack. Potential sites are limited to those in these lower risk areas. Specifically, the emergency relocation site should be located outside the High Risk Areas designated by the Federal Emergency Management Agency publication, TR-82. These areas represent the direct effect areas based on a maximum probable nuclear attack on counter force and counter value targets. Additionally, the site location will be limited to those in which the anticipated maximum blast overpressure in the area is 2 pounds per square inch or less. Appropriate blast protection will be developed as necessary.

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b. Fire Hazard. The hazard of primary fire ignition diminishes more rapidly than does the over-pressure hazard. At safe over-pressure distances there is only a slight danger of primary fire ignition. However, it is possible for fire to spread via conflagration from the primary ignition zone through areas of dense frame construction or wooded areas. This hazard shall be avoided through proper site selection. Emergency relocation site locations will be limited to those in which the anticipated maximum thermal effect of nuclear detonations in the area is two calories per square inch or less. Appropriate thermal protection will be developed as necessary.

c. Transportation. The geographic location of the emergency relocation site should be such that it facilitates effective functioning of operations in a post-attack environment. The emergency relocation site should be accessible, served by good surface transportation facilities and located within a one-day drive from the original headquarters.

d. Right of Access. To ensure right of access, Government-owned facilities will be used for emergency relocation site with the priority for selection going to Corps-owned facilities.

e. Dependent Support. While not authorized to reside within the emergency relocation site, dependents of essential personnel are authorized to be located in protected facilities in the immediate vicinity of the emergency relocation site. It is the responsiblity of each individual

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who has accepted an emergency assignment to make arrangements for the care of their dependents. It is in the interest of HQUSACE and subordinate commands to guide and assist members of their emergency staffs in making satisfactory arrangements for the care of their dependents in an emergency. The extent of guidance and assistance provided for dependent care shall be at the discretion of individual commanders and shall be accomplished within available resources.

2. Physical.

a. Radiological Protection. The emergency relocation site will be developed to ensure adequate radiation protection. A protection factor must be provided to limit the six-month accumulated dose to 100 roentgens within the facility.

b. EMP Protection. Adequate EMP protection will be provided to ensure the survival of essential communications and automatic data processing equipment.

c. Physical Security. Physical security of the facility is required to prevent access of unauthorized personnel.

d. Information Security. Security features will be present to prevent the compromise of classified information. The facility shall be capable of providing classified storage when not activated as an emergency relocation site and the facility should have construction features to prevent electronic espionage from outside the facility.

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3. Operational. Operational criteria are dependent upon the local requirements and are not established in this plan.

a. Work Space.

b. Sleeping Area.

c. ADP/Communications Space.

d. Support Area.

e. Readiness Capability.

f. Expansion Capability.

4. Support. The emergency relocation site shall be capable of rapid activation (approximately 72 hours). To accomplish this task, it is essential that equipment and supplies be preplaced at the emergency relocation site. These items include duplicate emergency files, automatic data processing equipment, office furniture, equipment and supplies, consumable supplies (for a 30-day duration), water and fuel, generators, communications equipment, Civil Defense (CD) or equivalent medical kits, medical supplies, sanitation provisions, radiological and biological hazard monitoring equipment and decontamination equipment.

a. Water Supply. In the period of emergency relocation site activation, it is likely that the public water supply will either be non-functional or contaminated. It is necessary, therefore, for the ERS to have an independent source of potable water. In addition to this requirement, the facility must have sufficient water for fire-fighting purposes.

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b. Sanitation System. It is likely that public sanitation facilities will not be functioning. A suitable method of waste disposal must exist for the emergency relocation site. Sanitation provisions include chemical toilets, incinerators, septic systems, and composting.

c. Power Source. The facility must remain functional in the absence of commercial electric power. Local generators will be required that are capable of sustaining operations continuously. Adequate provisions for long-term fuel storage are also required. The sizing of and/or provisions for such generators should be considered in conjunction with the individual user criteria.

d. Ventilation System. Because of radiological hazards and the resulting need for physical protection for the emergency relocation site, adequate ventilation is essential. Outside air may be safely used for ventilation if it is properly filtered and the intake located so as not to pull in the fallout particles.

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ACRONYMS AND ABBREVIATIONS

ADP.....Automatic Data Processing

AH.....Alternate Headquarters

CDR.....Commander

COG.....Continuity of Government

COOP.....Continuity of Operations

CONUS.....Continental United States

DA.....Department of the Army

DOD.....Department of Defense

FEMA.....Federal Emergency Management Agency

FOA.....Field Operating Agency/Activity

HQUSACE.....Headquarters, U. S. Army Corps of Engineers

JCS.....Joint Chiefs of Staff

RECA.....Residual Capabilities Assessment

USACE.....U. S. Army Corps of Engineers

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FLOOD CONTROL AND COASTAL EMERGENCIES

PREPAREDNESS PROGRAM

Mr. BEVILL. In connection with the Preparedness Program, how will the $1,560,000 for Facilities be used?

General HATCH. The funds requested under the Facilities feature are used to operate and maintain the emergency operations centers or EOC, for managing Corps response to natural disasters either under our authorities or in support of other Federal agencies. The funds are used to pay for the cost of the EOC facility itself where necessary, procurement of supplies and equipment needed to make the EOC operational, and maintenance of the facility and equipment. The development of plans and procedures necessary to operate the facility, special training of personnel in EOC operations, and testing of EOC personnel and equipments to ensure capability for rapid activation are funded under this feature.

STATUS OF EMERGENCY FUND

Mr. BEVILL. What funds are currently available in the Emergency Fund?

General HATCH. The status of the PL 84-99 Emergency Fund as of January 31, 1986, is as follows:

	Millions
Balance as of October 1, 1985	$24.6
FY 1986 Appropriation	25.0
Revocations (October 1, 1985–January 31, 1986)	1.2
Subtotal	50.8
Allocations (October 1, 1985–January 31, 1986)	12.7
Balance as of January 31, 1986	38.1

The current balance in the Emergency Fund will meet identified requirements and will allow for response to flood problems. However, water levels remain high in many California rivers and the full extent of damages to projects is not known. The spring flood season is still ahead and the extent of flooding could vary from moderate to severe. If severe flooding occurs and the Emergency Fund is exhausted, funds can be reprogrammed from other appropriations to meet immediate needs. When the total requirements for the fiscal year are identified, a supplemental request could be submitted.

PERMANENT INTERNATIONAL ASSOCIATION OF NAVIGATION CONGRESSES

Mr. BEVILL. How will the $70,000 budgeted for the Permanent International Association of Navigation Congresses be used?

General HATCH. The $70,000 will cover the costs for the United States to participate as a member nation in this international organization. Costs include expenses associated with participation in the Working Groups of the Permanent Technical Committees, the sponsoring of regional technical seminars and workshops, and the printing and distribution of the technical reports prepared by the Permanent International Association of Navigation Congresses. Our participation in this organization, the world's oldest, largest, and most prestigious international engineering/scientific organization concerned with inland and marine navigation, provides us with knowledge and experience that is very helpful in the planning, construction, and maintenance of Civil Works projects.

COASTAL ENGINEERING RESEARCH BOARD

Mr. BEVILL. With regard to the Coastal Engineering Research Board, the justifications state that the Board meets semi-annually, or at the call of the Chairman. How often has the Board met during the past five years?

General HATCH. Since February 1981, the Board has met nine times, and the next meeting will be this Spring. These meetings have resulted in review of the Coastal Engineering Research Programs, as well as technical reviews of selected Corps' coastal projects.

Mr. BEVILL. Specifically, how will the $12 million requested for the Revolving Fund be used?

General HATCH. Ten of the twelve million dollars requested will be used to initiate construction of a replacement dustpan dredge which is necessary for maintenance of the Mississippi River navigation system. The remaining two million dollars

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will be used for software conversion and to initiate acquisition under the Corps of Engineers Automation Plan, or CEAP.

EROSION PROTECTION SYSTEM FOR ENGINEER DEPOT IN SAVANNAH DISTRICT

Mr. BEVILL. Explain the need for an erosion protection system in the Savannah District.

General HATCH. The river bank on the north side of the Savannah River at the Savannah District Engineer Depot has eroded and flanked the bulkhead which supports the hardstand and service area of the depot. The bulkhead is old, has been undermined, and has deteriorated to the point that it can no longer be economically repaired or maintained. The proposed protection system will prevent the existing bulkhead and debris from falling into the river and becoming a hazard to navigation. In addition, it will prevent further damage to existing facilities and structures at the depot.

COASTAL ENGINEERING RESEARCH CENTER ADDITIONS AND BETTERMENTS

Mr. BEVILL. You are proposing additions and betterments at the Coastal Engineering Research Center. Will the betterments eliminate the need for space in the 14 other buildings referred to on page 85?

General HATCH. All but four of the older buildings are mobile office trailers or other temporary structures. All of these buildings will be removed and declared as surplus at the Waterways Experiment Station. The remaining four permanent structures will be utilized as storage facilities with substantially reduced energy levels, resulting in additional energy savings.

MOBILE DISTRICT CRANE BARGE AND VICKSBURG DISTRICT TENDER

Mr. BEVILL. You are also proposing to construct a new crane barge and to replace a tender. Where will these vessels be located and why are they required?

General HATCH. The requested crane barge will be used in our Mobile District as a replacement for two older cranes built in 1909 and 1938. In addition to age and lack of spare parts, neither of the older cranes has the lifting capacity needed for current requirements. The additional maintenance resulting from the completion of the Tennessee-Tombigbee navigation project, along with other lock and channel maintenance requirements, require a reliable, higher capacity crane barge. The replacement 125-ton crane barge will be capable of handling the long-term heavy lift needs of the Mobile District. The tender will replace an existing vessel in the Vicksburg District that requires substantial annual repairs and maintenance to remain operational. The replacement tender will be utilized for towing barges loaded with concrete mat to support the mat sinking operations on the Mississippi River. It will also be used to tow labor barges and quarter boats during demanding weather conditions and heavy river traffic.

CORPS OF ENGINEERS AUTOMATION PLAN

Mr. BEVILL. Please describe the current status of the Corps of Engineers Automation Plan. Please include in the record a copy of the January 30, 1986 briefing paper on the Plan, updated as necessary to reflect more recent events.

General HATCH. The Corps of Engineers Automation Plan, or CEAP, is a comprehensive plan for modernizing, maintaining, and managing our automation architecture to insure that it fully supports the Corps' evolving data base design and application systems, and is consistent with the Army's standard architecture concept. Since its inception in 1983, CEAP has consisted of three objectives: CEAP-I, CEAP-II, and CEAP-III.

CEAP-I is the replacement of current general purpose automation capability, Corps-wide. We intend to accomplish this in three phases: A,B, and C. CEAP-IA is the acquisition of an integrated in-house system of hardware, communications, software, and services to replace our installed division and district computers. This action is currently awaiting approval in the Office of the Assistant Secretary of the Army for Financial Management. Upon approval, we are prepared to finalize and release a Request for Proposals, or RFP, to industry; we anticipate this will occur in early FY 1987, with contract award and installation to begin in FY 1988. Meanwhile, we are starting to rewrite our application software to facilitate conversion to the new system. I have requested $2,000,000 in FY 1987 to continue this process and initiate the acquisition; $88,615,000 will be required in FY 1988-90 for the acquisition, installation, and actual software conversion; $4,400,000 will have been expended through FY 1986 for project management and software conversion.

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CEAP-IB and -IC are plans for competitive replacement of two large teleprocessing services contracts the Corps currently has with Control Data Corporation and McDonnell Douglas Automation, respectively. Decisions on the nature, scope, and timing of these replacements will be made during the next two years. Resulting replacement contracts and/or services will be closely interfaced with CEAP-IA.

CEAP-II, a near-term fix involving the upgrade of existing leased division computers with leased Honeywell DPS8's, is now complete. The contract was awarded in October 1985; the last system is undergoing acceptance testing in the European Division right now. This completes the standardization of computers at 11 division offices. Concurrently, we upgraded the communications, memory, and auxiliary storage on 35 Harris minicomputers in district offices throughout the Corps. These were the systems purchased originally under the Consolidated Procurement of Minicomputer Systems program of FY 1983-4. These two actions complete the near-term fixes required to keep the Corps' automation capability viable until it can be replaced under CEAP-IA.

CEAP-III is a roll-up of three individual acquisitions which are not part of the general purpose, mainframe/minicomputer architecture to be replaced by CEAP-IA. These include the acquisition of standard water control minicomputers; the acquisition of Corps-wide supercomputer support; and the acquisition of standard Computer-Aided Design and Drafting, or CADD, equipment. Initial acquisition of water control minicomputers was completed in November 1985; $9,700,000 will be programmed over the next 5 years for sytem expansion and maintenance. Acquisition of supercomputer support is ongoing. Currently, this support is provided via the Control Data Corporation teleprocessing service contract I mentioned as the subject of CEAP-IB. However, we are working with the Army to acquire an Army supercomputer capability. If successful, we should be able to satisfy our requirements much more economically and, consequently, reduce the requirement for contract services. The Army system will be military funded; we will reimburse the operator for services used. The CADD acquisition is also underway. We received procurement authority from the General Services Administration in January 1986. We expect to put an RFP on the street in March 1986 and award the contract by the end of FY 1986. We have programmed $11,000,000 in FY 1987 for this acquisition. Remaining requirements will be programmed in future years. The current estimate for CADD acquisition is $32,000,000.

This completes my description of CEAP status. I will be pleased to provide an updated version of the January 30, 1986 briefing paper you requested.

[The information follows:]

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CORPS OF ENGINEERS AUTOMATION PLAN

(CEAP)

UPDATE FOR

HOUSE APPROPRIATIONS COMMITTEE

&

ENERGY AND WATER DEVELOPMENT SUBCOMMITTEE

30 JANUARY 1986

(UPDATED FEBRUARY 1986)

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CORPS OF ENGINEERS
AUTOMATION PLAN

CEAP IS THE CORPS' COMPREHENSIVE PLAN FOR MODERNIZING, MAINTAINING, AND MANAGING ITS AUTOMATION ARCHITECTURE TO ENSURE THAT IT: (1) FULLY SUPPORTS THE CORPS' EVOLVING DATA BASE DESIGN AND APPLICATION SYSTEMS; AND (2) IS CONSISTENT WITH THE ARMY'S STANDARD ARCHITECTURE CONCEPT.

OBJECTIVE I -- COMPETITIVE REPLACEMENT OF MAINFRAME/MINICOMPUTER & COMMUNICATIONS CAPABILITY

OBJECTIVE II -- NEAR TERM (OPERATIONAL) FIXES

OBJECTIVE III -- SUPPLEMENTAL REQUIREMENTS

CEAP

OBJECTIVE I

(CEAP-I)

COMPETITIVE REPLACEMENT OF MAINFRAME/MINICOMPUTER

& COMMUNICATIONS CAPABILITY

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CEAP-IA STATUS

- CEAP-IA SOFTWARE CONVERSION MANAGEMENT CONTRACT AWARD -- 10/1/85 (SYSTEM AUTOMATION CORP)
- ARMY PRIORITIZED CEAP-IA #37 OF 1004 -- 12/19/85
- OACSIM RECOMMENDS ASA(FM) APPROVE CEAP-IA -- 12/30/85
- AWAITING ASA(FM) APPROVAL -- PROBABLY FEB/MAR 86
- JANUARY 1986 SCHEDULE WILL SLIP MINIMUM OF SIX MONTHS
- WILL FINALIZE SCHEDULE AFTER APPROVAL
- REQUIREMENT FOR OSD REVIEW MAY DELAY APPROVAL

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OTHER CEAP-I ACTIONS

* CEAP-IB -- COMMERCIAL SERVICES FOR LARGE-SCALE S&E

  ** CEAP-IB SCHEDULED FOR RECOMPETITION IN FY 88

  ** CEAP-IB WILL BE TIED INTO CEAP-IA FOR COMMUNICATIONS

* CEAP-IC -- COMMERCIAL SERVICES FOR MILITARY CONSTRUCTION PROGRAMMING, ADMINISTRATION & EXECUTION

  ** CEAP-IC WILL BE RECOMPETED IN FY 86-7

  ** CEAP-IC WILL BE CLOSELY TIED TO BOTH CEAP-IA AND ARMY'S VIABLE

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CEAP-I LIFE CYCLE COSTS ($000)
JANUARY 1986

ITEM	FY85/86	FY 87	FY 88	FY 89	FY 90	FY91-95	TOTAL
NO. CPUs ACCEPTED	0	0	20	27	10	0	57
INVESTMENT COSTS							
ADPE	0	0	33934	36051	6415	0	76400
COMMO EQUIP	0	0	1960	2376	480	0	4816
PROG MNGT/SOFT CON.	4400	1750	1750	0	0	0	7900
ONE-TIME COSTS	0	0	2140	2889	870	0	5899
TOTAL INVEST COST	4400	1750	39784	41316	7765	0	95015
RECURRING COSTS							
COMMO LEASE	0	0	2520	5922	7182	35910	51534
MAINTENANCE	0	0	2688	5658	6462	32307	47115
SITE RENTAL/LEASE	0	500	3500	3500	3500	17500	28500
TOTAL RECURRING COSTS	0	500	8708	15080	17144	85717	127149
OTHER ONE-TIME COSTS	0	2900	8188	5035	937	0	17060
TSP CONTRACT COSTS							
CEAP-IB	0	0	0	3500	3500	17500	24500
CEAP-IC	0	0	5588	5588	5588	27940	44704
OTHER	0	0	5112	4912	4912	24560	39496
TOTAL TSP	0	0	10700	14000	14000	70000	108700
PRIP INCREMENT	0	0	5145	2726	6007	27471	41349
TOTAL CEAP-I COSTS	4400	5150	72525	78157	45853	183188	389273

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CEAP

OBJECTIVE II

(CEAP-II)

NEAR TERM (OPERATIONAL) FIXES

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CEAP-II STATUS

* DIVISION COMPUTER REPLACEMENT (NON-COMPETITIVE):
  ** CONTRACT AWARD -- 10/1/84 HONEYWELL DPSB
  ** CONUS INSTALLATION COMPLETE -- 2/2/85
  ** OCONUS INSTALLATION COMPLETE -- 3/7/86
* OPERATING SYSTEM REPLACEMENT COMPLETE (GOOS8) -- 4/30/86
* DISTRICT COMPUTER UPGRADE (NON-COMPETITIVE):
  ** CONTRACT AWARD -- 7/7/85 (HARRIS)
  ** DELIVERY COMPLETE -- 10/31/85
  ** 23 OF 35 SITES COMPLETE TO-DATE

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OBJECTIVE III

(CEAP-III)

SUPPLEMENTAL REQUIREMENTS

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CEAP-III STATUS

* WATER CONTROL MINICOMPUTERS
  ** CONTRACT AWARD -- 3/11/85 (HARRIS)
  ** INSTALLATION COMPLETE -- 11/10/85

* COMPUTER-AIDED DESIGN & DRAFTING (CADD) SYSTEM
  ** ASA(FM) APPROVED 29 SYSTEMS -- 10/18/85
  ** RFP ANTICIPATED 2ND QTR FY 86
  ** INSTALLATION TO BEGIN 4TH QTR FY 86

* SUPERCOMPUTER
  ** CORPS' REQUIREMENTS INCORPORATED IN ARMY'S PLAN
  ** CURRENTLY SCHEDULED TO RECEIVE 6TH COMPUTER
  ** ARMY FUNDING (OPA)
  ** WILL REDUCE/REPLACE CEAP-IB REQUIREMENT

FISCAL YEAR 1986 TRANSFER BUDGET REQUEST

Mr. BEVILL. At this point, we will insert the appropriation lauguage and justification material for the Fiscal Year 1986 Transfer Budget Request.

[The appropriation language and justification follow:]

DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS, CIVIL

APPROPRIATION LANGUAGE

Appropriation Title: General Expenses.

For an additional amount of $3,000,000 for "General Expenses" to remain available until expended, and to be derived from "Operation and Maintenance, General."

JUSTIFICATION FOR TRANSFER BUDGET REQUEST UNDER CIVIL WORKS APPROPRIATION TITLE—FISCAL YEAR 1986

Appropriation Title: General Expenses.

An additional $3,000,000 is required in Fiscal Year 1986 under the General Expenses appropriation title to restore the 5 percent pay cut proposed in the Fiscal Year 1986 budget. The Corps of Engineers did not have the pay cut funds restored in the Energy and Water Development Appropriation Act, 1986, as proposed by the President, because of the timing of Congressional action on the bill. After the House and Senate passed the Act, but before conference committee action, the President sent to the Congress a Budget Amendment reinstating funds for the 5 percent pay cut. Because the General Expenses appropriation in both the House and Senate bills was the amount requested in the original budget, the amendment was not considered by the conference committee.

In addition to the pay cut, this appropriation title was frozen at the Fiscal Year 1985 budget authority and was further reduced by 10 percent of administrative expenses. The effect was to reduce the budget request from $118,000,000 to $107,000,000, which is $8,000,000 less than Fiscal Year 1985. This funding level is further impacted by the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177) in the amount of $4,601,000.

The purpose of the General Expenses appropriation is to cover civilian and military Civil Works personnel salaries and related costs for executive direction and management of the entire Civil Works program. This function involves the staffing of 1750 civilian and 80 military officer positions in the Office, Chief of Engineers, the 11 division offices and four support activities to provide guidance and direction for the execution of the Civil Works program in the 36 districts. As a result, the $15,600,000 reduction in the budget request has a significant adverse impact on the executive direction and management of the Civil Works program execution, equivalent to a 15 percent reduction in its staffing. Equally significant, such a reduction will have the effect of retaining the Civil Works program while forcing disproportionate reductions in its executive oversight. A manpower reduction of this size could not be taken through attrition alone; a reduction in General Expenses funded positions would be necessary.

The $3,000,000 amount requested for restoration of the pay cut can not be absorbed, on top of the other reductions noted above, without severe impacts on executive direction and management staffing and the efficient execution of the Civil Works program. Accordingly, to mitigate this effect, it is critical that the $3,000,000 be restored by a transfer from the Operation and Maintenance, General appropriation.

GENERAL EXPENSES FY 1986 TRANSFER REQUEST

Mr. BEVILL. Explain the budget request for a transfer of $3 million from "Operation and Maintenance, General" to "General Expenses" in FY 1986.

General HATCH. An additional $3,000,000 is required in Fiscal Year 1986 under the General Expenses appropriation title to restore the five percent pay cut proposed in the original Fiscal Year 1986 budget. The Corps of Engineers did not have the pay cut funds restored in the Energy and Water Development Appropriation Act, 1986, as proposed by the President, because of the timing of Congressional action on the Bill. After the House and Senate passed the Bill, but before conference committee action, the President sent to the Congress a Budget Amendment reinstating funds for the five percent pay cut. Because the General Expenses appropriation in both the House and the Senate bills was the amount requested in the original budget, the amendment was not considered by the conference committee.

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In addition to the pay cut, this appropriation title was frozen at the Fiscal Year 1985 budget authority, reduced by 10 percent of administrative expenses, and further impacted by a reduction of $4,601,000 pursuant to the Balanced Budget and Emergency Deficit Control Act of 1985, Public Law 99-177. The net effect is a reduction of $12,601,000 from the Fiscal Year 1985 appropriation and a reduction of $15,601,000 from the Fiscal Year 1986 budget request.

The purpose of the General Expenses appropriation is to cover civilian and military Civil Works personnel salaries and related costs for executive direction and management of the entire Civil Works program. This function involves 1750 civilian and 80 military officers positions in the Office, Chief of Engineers, the 11 division offices, and four support activities that provide guidance and direction for the execution of the Civil Works program in the 36 districts. As a result, the $15,601,000 reduction in the budget request has a significant adverse impact on the executive direction and management of the Civil Works program execution. The staffing reduction of the size necessary to realize a funding reduction of this magnitude could not be taken through attrition along; a reduction in General Expenses funded positions would be necessary.

The $3,000,000 amount requested for restoration of the pay cut cannot be absorbed, on top of the other reductions noted above, without severe impacts on executive direction and management staffing and the efficient execution of the Civil Works program. Accordingly, to mitigate this effect, it is critical that the $3,000,000 be restored to General Expenses by a transfer from the Operation and Maintenance, General apppropriation.

Mr. BEVILL. The justifications indicate a budget request to restore the deleted FY 1986 pay reduction. Are these amounts in addition to the $3 million referred to above?

General HATCH. No sir, the $3 million requested to be transferred from "Operation and Maintenance, General" to "General Expenses" is to restore the deleted FY 1986 pay reduction.

Additional Questions Submitted by Congressman Watkins

COORDINATION STUDIES WITH OTHER AGENCIES, SECTION 22

Mr. WATKINS. For Fiscal 1986, $200,000 was earmarked for Oklahoma under Section 22, Coordination Studies With Other Agencies under your General Investigations funding. Have all of these funds been allocated? If so, how? If not, why not?

General HATCH. We have allocated all of the $200,000 to the Tulsa District for this work.

Mr. WATKINS. How are these funds being utilized?

General HATCH. They will be used to develop hydrologic basin reports for selected stream and river basins within the State, to continue providing technical assistance to the Oklahoma Water Resources Board, or OWRB, on water issues of mutual concern, and to prepare regional water treatment conveyance system analyses for southwest and northeast Oklahoma.

Mr. WATKINS. How much of your Fiscal 1987 budgeted funds for Coordination Studies with Other Agencies are earmarked for Oklahoma?

General HATCH. Our request includes $100,000 for the State of Oklahoma.

Mr. WATKINS. How do you plan to utilize these funds? Are you working with the Oklahoma Water Resources Board with these funds?

General HATCH. Yes, at the request of the OWRB, we will continue to work on furthering the concepts of the Oklahoma Comprehensive Water Plan.

Mr. WATKINS. Are you working with anyone else within the State on these funds?

General HATCH. No we work only with OWRB.

Mr. WATKINS. Who else has legitimate access to these funds?

General HATCH. No one but the Corps of Engineers. Section 22 funds are used only by the Corps of Engineers to provide or analyze existing data. These funds are not to be used to finance contractor or non Federal efforts.

Mr. WATKINS. Can these funds be obligated for a study at the request of another entity of State government, such as a public trust for whom the State of Oklahoma is the beneficiary?

General HATCH. Not based on a direct request to the Corps. Other entities of the State may request that the OWRB include the study in its annual request for work items to be accomplished under the Section 22 Program. In addition, the study must further the development of the Oklahoma Comprehensive Water Plan and must not be used to supplement studies under other ongoing or pending Corps programs.

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WATER-RESOURCES-BASED ECONOMIC DEVELOPMENT COMPUTER MODEL

Mr. WATKINS. You were directed in the Fiscal 1986 appropriations bill for the Corps of Engineers to allocate $150,000 under General Investigations, Research and Development "to continue the demonstration of economic development planning technology in Southeastern Oklahoma" through continued design and testing of the water-resources-based economic development computer model. Have you allocated all of these funds? If so, how? If not, why not?

General HATCH. The FY 1985 R&D budget was reprogrammed to allot $130,000 on September 15, 1985 for the purpose of continued design and testing of the water-resources-based economic computer model. The funds were obligated in January 1986 and the work schedule is estimated to be nine months. Therefore, there is no practical need to program more funds in Fiscal Year 1986.

Mr. WATKINS. What is the Corps capability on this project?

General HATCH. Although project and study capabilities reflect the readiness of the work for accomplishment, they are in competition for available funds and manpower Army-wide. In this context, the Fiscal Year 1987 capability amount of $150,000 for the Water-Resources-Based Economic Development Computer Model R&D work unit considers this work unit by itself without reference to the rest of program. However, it is emphasized that the total amount proposed for the Army's Civil Works Program in the President's Budget for Fiscal Year 1987 is the appropriate amount consistent with the Administration's assessment of national priorities for Federal investments and the objectives of avoiding large budget deficits and the serious adverse effect that Government borrowing is having on the national economy. Therefore, while we could utilize additional funds on individual projects and studies, offsetting reductions would be required in order to maintain our overall budgetary objectives.

TECHNOLOGY TRANSFER DEMONSTRATION PROJECT

Mr. WATKINS. You were directed in the Fiscal 1986 appropriation for the Corps of Engineers under the General Investigations Research and Development account to expend $250,000 "for technology transfer to allow the Corps of Engineers to continue and extend its existing demonstration program on how to pursue an active "hands-on" approach to execution of effective technology transfer." Have all of these funds been allocated? If so, how? If not, why not?

General HATCH. Phase I of this contract effort was completed April 30, 1985. Phase II began May 1, 1985 and was originally scheduled to be completed March 31, 1986. However, the contractor, Rural Enterprises, Inc., requested a 2-month, no-cost extension on Phase II until May 19, 1986. All Phase II efforts during Fiscal Year 1986 are supported by unexpended funds carried over from Fiscal Year 1985.

Approximately $75,000 in Fiscal Year 1986 funds are programmed for the Technology Transfer Demonstration work unit to conduct Phase III work between June 1 and September 30, 1986.

Mr. WATKINS. Within your Fiscal 1987 budget request, how much is requested for the continuation of this technology transfer demonstration project?

General HATCH. We have not requested any Fiscal Year 1987 funds for the demonstration project.

Mr. WATKINS. What is the Corps capability on this project?

General HATCH. Subject to our standard language and caveats in expressing capabilities, as previously indicated for another R&D work unit, we estimate that our capability in Fiscal Year 1987 on the Technology Transfer Demonstration work unit is $250,000.

Mr. BEVILL. This committee will now stand adjourned until 10:00 in the morning.

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MONDAY, FEBRUARY 24, 1986.

SOUTHWESTERN DIVISION

WITNESSES

BRIG. GEN. JEROME B. HILMES, DIVISION ENGINEER
CHARLES P. RINGENBERG, JR., P.E., CHIEF, PROGRAM DEVELOPMENT OFFICE
GEORGE T. CARLSON, PROGRAM DEVELOPMENT OFFICE
LARRY W. DONOVAN, P.E., PROGRAM DEVELOPMENT OFFICE
ARTHUR D. DENYS, P.E., CHIEF, ENGINEERING DIVISION
BARRY G. ROUGHT, P.E., CHIEF, PLANNING DIVISION
AL P. HUTCHISON, P.E., CHIEF, CONSTRUCTION-OPERATIONS DIVISION

INTRODUCTION OF WITNESSES

Mr. BEVILL. The committee will come to order.

General Hilmes, we are delighted to have you with us. You may want to introduce those you have with you and proceed as you wish.

General HILMES. Sir, I replaced Bob Dacey, as you might know, as the Division Engineer in the Southwestern Division in August of 1985. With me I have Charles Ringenberg to my right, the Chief of Programs; and George Carlson, also in the Programs Office. To my left, Barry Rought, my Chief Planner; Art Denys, my Chief Engineer; and Al Hutchison, my Chief of Construction-Operations.

Mr. BEVILL. Glad to have each of you with us today.

General HILMES. Sir, with your permission, I will submit my status report for the record and briefly summarize that report using a few slides.

AREA OF RESPONSIBILITY

The Division embraces all or parts of eight States, an area that has sixteen percent of the land and ten percent of the population of the U.S.

The terrain varies from the arid regions of New Mexico, to the wooded areas of Arkansas.

We have five engineer districts, with offices in Fort Worth and Galveston, Texas; Little Rock, Arkansas; Tulsa, Oklahoma; and Albuquerque, New Mexico.

FISCAL YEAR 1987 PROGRAM

The fiscal year 1987 budget request is about $331 million. About four percent will be used for general investigations; 37 percent for construction activities; and 59 percent for operation and maintenance.

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GENERAL INVESTIGATIONS

The GI program is $13.5 million, of which 54 percent is allocated for surveys; six percent for Phase I AE&D; 26 percent for CP&E; and 14 percent for AE&D.

SURVEYS

Survey studies. About 7.3 million is requested for 25 studies located throughout the division area, three in Arkansas; one in Colorado; and three in Kansas; four in New Mexico; five in Oklahoma; and nine in Texas.

LITTLE FOSSIL CREEK, VICINITY OF HALTOM CITY, TX

Let me draw the committee's attention to three studies. The Little Fossil Study Area is located in North Central Texas near Fort Worth. It is a proposed new start for fiscal year 1987 and $225,000 is requested to initiate and complete the reconnaissance phase studies.

HILLEBRANDT BAYOU AND TRIBUTARIES, TX

The Hillebrandt study near Beaumont, Texas, was added by Congress in fiscal year 1986. $50,000 is requested to initiate feasibility studies in partnership with the local sponsor.

LAS CRUCES, NM

The completed Las Cruces, New Mexico, project review study was initiated at the direction of Congress in fiscal year 1986. $50,000 will be used to start feasibility studies of an existing ungated dam and a perched channel downstream of that dam in a developed area.

ARKANSAS RIVER AND TRIBUTARIES ABOVE JOHN MARTIN DAM, CO

The main stem of the Arkansas River above John Martin Dam in Colorado is the only Phase I AE&D project included in our fiscal year 1987 request. $735,000 in GI funds will be used to continue the Phase I AE&D effort of an area that has a wide flood plain and has suffered severe flooding in the past.

CONTINUATION OF PLANNING AND ENGINEERING

Moving now into CP&E, $3.6 million is requested for seven projects: one in Arkansas; one in New Mexico; one in Oklahoma and four in Texas.

MINGO CREEK, OK

I would like to briefly discuss three of these. The Mingo Creek Project is in Tulsa, Oklahoma. $423,000 will complete CP&E work in fiscal year 1987. Construction of this project will provide protection to the eastern part of the city. Floods like the one that devastated the area in May 1984 have hit the area in varying degrees of seriousness on the average of once every two or three years.

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BRAZOS ISLAND HARBOR, TX

The Brazos Island Harbor Project is located at Brownsville, Texas. $300,000 will initiate CP&E studies which are scheduled to complete in March 1990.

TEXAS CITY CHANNEL, TX

The Texas City Channel Project is located in the Galveston Bay Area. $800,000 will continue CP&E activities that are scheduled for completion in September 1988.

ADVANCE ENGINEERING AND DESIGN

Moving now into AE&D, $1.9 million is requested for six projects: one in Kansas, three in New Mexico and two in Texas.

ALAMOGORDO, NM

I would like to discuss two of these. For the Alamogordo, New Mexico, project, $330,000 is requested to resume AE&D activities. This project would provide much needed protection from flooding that results from rainfall runoff from the mountains to the east in a rapidly developing area of the city where existing drainage channels are insufficient to handle any but the smallest amount of rainfall runoff.

RIO GRANDE FLOODWAY
SAN ACACIA TO BOSQUE DEL APACHE UNIT, NM

The San Acacia to Bosque Del Apache project is located above the existing Elephant Butte Reservoir, a Bureau of Reclamation project, $500,000 will initiate AE&D on this project.

The project, which involves replacing 58 miles of existing spoil bank levees that separate the wide Rio Grande from the Bureau's Conveyance Channel, will provide protection from flooding and eliminate the continuing threat of destroying the conveyance channel.

CONSTRUCTION, GENERAL

The fiscal year 1987 request for Construction, General is $122 million. Seventy-four percent would be used to continue ongoing projects; 16 percent to continue projects initiated by the fiscal year 1985 Supplemental Appropriations Act, four percent for new starts and six percent for dam assurance projects.

Included in this request is $5.2 million to initiate construction on four projects: Fourche Bayou at Little Rock, Arkansas; Great Bend, Kansas; Halstead, Kansas; and the Lake Wichita, Holliday Creek, project at Wichita Falls, Texas.

FOURCHE BAYOU IN THE VICINITY OF LITTLE ROCK, AR

For the Fourche Bayou Project at Little Rock, $760,000 will be used to start construction. Channel improvements are scheduled for award in June 1987. This project, which will require authoriza-

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tion prior to construction, is urgently needed to reduce the flooding that frequently occurs in urbanized areas of Little Rock.

GREAT BEND, KS

The Great Bend, Kansas, project is a recommended new construction start. The $2.6 million requested will start work on a system of channels and levees to protect the city. Plans and specifications are being prepared in fiscal year 1986 on this authorized project to permit award of the first construction contract in January 1987.

HALSTEAD, KS

For the Halstead, Kansas, project, which requires construction authorization, $1.1 million is requested. With these funds, we will complete the first set of plans and specifications and start construction in May 1987.

LAKE WICHITA, HOLLIDAY CREEK AT WICHITA FALLS, TX

The Lake Wichita, Holliday Creek project, located in Wichita Falls, Texas, is the fourth new start project. The requested $700,000, assuming the project is authorized, will permit award of the first contract in June 1987.

FISCAL YEAR 1985 SUPPLEMENTAL APPROPRIATIONS ACT CONSTRUCTION NEW STARTS

The fiscal year 1987 construction request includes $19 million for construction of four projects that were started in accordance with the fiscal year 1985 Supplemental Appropriations Act. These projects, two flood control, one navigation, and one hydroelectric, are all located in Texas.

COLORADO RIVER AND TRIBUTARIES, BOGGY CREEK AT AUSTIN, TX

The Boggy Creek project at Austin, Texas, is scheduled for construction initiation in May 1987 with the $900,000 requested. Funds available in fiscal year 1986 are being used to complete the first set of plans and specifications.

CLEAR CREEK, TX

The Clear Creek project is located southeast of Houston, Texas, $8.2 million for fiscal year 1987 will be used to complete construction of the outlet works and to start channel rectification work. Fiscal year 1986 funds will complete plans and specifications for the first contract with construction award in August 1986.

FREEPORT HARBOR, TX (1970 ACT)

At the Freeport Harbor, Texas, project, construction will be continued with the $9.9 million requested. The first construction contract, essentially for the relocation of the north jetty, is scheduled for award in July 1986.

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TOWN BLUFF HYDROPOWER, TX

The existing Town Bluff project is located in southeast Texas north of Beaumont. Construction of the hydropower addition is scheduled to be started in May 1986 using a portion of the $16.9 million placed on deposit by the local sponsor on 19 December 1985.

CONTINUING CONSTRUCTION

The fiscal year 1987 request for Construction, General includes $91.1 million to continue construction on 12 other projects: one in Arkansas; one in Oklahoma; and ten in Texas. Shown on these slides are the amounts requested for each project. I would like to briefly discuss three of these projects.

ARCADIA LAKE, OK

The Arcadia project is located near Oklahoma City, Oklahoma. Work on raising the Turner Turnpike continues to advance with the relocation scheduled for completion this fall. Work on the embankment is continuing. Closure was completed in October 1985 and deliberate impoundment of the conservation pool is scheduled for September 1986.

RAY ROBERTS LAKE, TX

The Ray Roberts dam, which is located north of the Dallas-Fort Worth area in Texas, is essentially on schedule. Construction of the outlet works continues, as well as work on the embankment. Both of these features will be completed with fiscal year 1986 funds. Fiscal year 1987 funds will be used primarily to continue relocations and to start construction of the recreation facilities.

SAN ANTONIO CHANNEL IMPROVEMENT, TX

The San Antonio, Texas, project is on schedule. Design of a tunnel to handle flood flows through the downtown area is nearing completion with a construction contract scheduled for award in August 1986. Studies to date indicate the cost of the project may increase by about $36 million; however, construction of the tunnel will be less costly than proceeding with construction of an open channel through the metropolitan area, as originally proposed.

DAM SAFETY ASSURANCE

Seven million dollars are requested for work on two dam safety assurance projects in fiscal year 1987. One is located in Texas and the other, which I will briefly discuss, is in New Mexico.

JEMEZ CANYON DAM, NM

The Jemez Canyon project is located north of Albuquerque, New Mexico. Two million dollars will complete dam safety modifications which include raising the dam and widening the spillway. This work will start in May 1986.

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OPERATION AND MAINTENANCE

The fiscal year 1987 request for operations and maintenance is $194.9 million of which: 29 percent will be used on channels and harbors along the Gulf Coast; 10 percent will be used on locks and dams; 31 percent for flood control activities; 28 percent for operation of multiple-purpose projects; and 2 percent for protection of navigation and regulatory activities.

DREDGING AND MAINTENANCE

The request for dredging and maintaining 12 projects along the Gulf Coast in fiscal year 1987 is $55.6 million. This will provide for the continued maintenance of projects like the Houston ship channel, the Gulf Intracoastal Waterway and the Corpus Christi Project.

MC CLELLAN-KERR, ARKANSAS RIVER AND NAVIGATION SYSTEM ARKANSAS AND OKLAHOMA

The fiscal year 1987 request includes $20.4 million for the continued operation of 13 locks and dams on the McClellan-Kerr Navigation System. This will provide for channel maintenance, like dredging on the White River portion of the project, as well as operation and maintenance of other elements of the system, like W.D. Mayo Lock and Dam in Oklahoma and Murray Lock and Dam in Arkansas.

FLOOD CONTROL PROJECTS

The $59.4 million requested for operation and maintenance of 68 flood control projects and six other flood control activities will permit the continued effective operation of projects like John Martin Dam in Colorado, all of which have collectively prevented more than $4.3 billion in flood damages to date.

GRAPEVINE LAKE, TX

These projects more than pay for themselves. Take Grapevine Lake shown on the left and the bottom line on the right. Grapevine Lake cost $20.8 million and has already prevented more than $802.2 million in flood damages alone for a pay back ratio of 38.6. Then look at the other projects, which are just a small sampling of the division. And this doesn't include the substantial benefits derived from hydropower, water supply, recreation, and navigation. So the benefits are there, they are real and that is what tells us that we can find local cost sharing partners.

MULTIPLE-PURPOSE PROJECTS

For 18 multiple-purpose power projects in the Southwestern Division Area, $55.2 million is requested in fiscal year 1987. These projects, like Bull Shoals Lake in Arkansas, have a planned capacity of 1,700 megawatts and, like Table Rock Lake in Missouri and Webbers Falls in Oklahoma, provide other benefits including flood control, recreation, water supply and navigation.

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GENERAL REGULATORY ACTIVITIES

Included in our request is $4.2 million primarily for general regulatory activities connected with the wetlands of the division area such as the marsh lands along the Gulf Intracoastal Waterway.

SOUTHWESTERN DIVISION

The Southwestern Division has a multitude of water resource problems and needs in an area that extends from middle Kansas, where the El Dorado project is located, south to the Texas Gulf Coast, represented by Galveston Harbor, and from the Rocky Mountains of Colorado in the background of the Trinidad Lake Project, east to eastern parts of Arkansas and Missouri as represented by the Clearwater Lake Project in Missouri.

SUMMARY

As you can see from these slides, the Southwestern Division had a good year in fiscal year 1985 and so for fiscal year 1987, the request of $331 million, together with the contributions of the local sponsors, will help solve some of the real problems and needs of our area by continuing ongoing studies and projects. But there are many other worthwhile projects, which the Omnibus Bill will move forward including the three I mentioned in this appropriations request.

Mr Chairman, this concludes my status report for the Southwestern Division. I will be happy to address any questions that you or members of the committee may have.

Mr. BEVILL. We will insert the report of General Hilmes and the justification material of the Southwestern Division in the record at this point, without objection.

[The status report and justification material follow:]

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STATUS REPORT
BRIGADIER GENERAL JEROME B. HILMES, DIVISION ENGINEER
SOUTHWESTERN DIVISION
24 FEBRUARY 1986

The Southwestern Division Area embraces all or parts of eight states, which is an area that has 16 percent of the land and 10 percent of the population of the United States. The Division's Civil Works mission centers on three River Basins: Texas Gulf, Arkansas-White-Red and Rio Grande. The terrain varies from the eastern slopes of the Rocky Mountains in Colorado; to the arid region of New Mexico (like that which surround the Two Rivers Dam project); to the plush green areas of Arkansas in which the Greers Ferry Lake project is located; to the tidal areas of southeast Texas. The Division office is located in Dallas, Texas and is comprised of five engineer districts, with district offices located in Fort Worth and Galveston, Texas; Little Rock, Arkansas; Tulsa, Oklahoma; and Albuquerque, New Mexico.

FISCAL YEAR 1987 PROGRAM

The Fiscal Year 1987 program for studies and projects in this area is $330,603,000. About four percent of this amount will be used for General Investigations; about 37 percent will be used for Construction; and about 59 percent will be used for Operation and Maintenance activities at completed projects.

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The requested amount for Fiscal Year 1987 compares to the $288,233,000 in Federal funds that have been or will be allocated to the Southwestern Division for the current year.

GENERAL INVESTIGATIONS

The Fiscal Year 1987 Budget request for the General Investigations Appropriations is $13,514,000 of which 54% is allocated to surveys; 6% to Phase I Advance Engineering and Design activities; 26% to Continuation of Planning and Engineering; and 14% to Advance Engineering and Design. These Federal funds, together with a scheduled contribution of $1,730,000 from local sponsors, will provide for continuing Planning and Engineering activities on high priority studies and projects in the Southwestern Division area. This program of $15,244,000 for Fiscal Year 1987 compares with the $12,879,000, including a local interest contribution of $230,000, which is scheduled for use in Fiscal Year 1986. The change reflects the increased participation of local interests in the accomplishment of the feasibility phase of new survey studies in New Mexico and Texas.

SURVEY STUDIES

The Fiscal Year 1987 request of $7,271,000 in Federal funds for survey studies, together with local sponsor contributions of $1,730,000 on eight studies, will provide for effort on 25 separate studies located on major river basins throughout the Division area. These studies are located as follows: three in Arkansas; one in Colorado; three in Kansas; four in New Hexico; five in Oklahoma; and nine in Texas as shown in the table below:

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STUDY	FY 1987 FEDERAL REQUEST	FY 1987 LOCAL SPONSOR CONTRIBUTION
ARKANSAS		
Arkansas River Basin, AR & OK	$550,000	$550,000
Clarksville	175,000	0
White River Basin, AR & MO	400,000	400,000
COLORADO		
Fountain Creek and Tributaries North of Pueblo	210,000	210,000
KANSAS		
Arkansas River and Tributaries, Great Bend Kansas to Tulsa, Oklahoma	600,000	0
Grand (Neosho) River, KS & OK	600,000	0
Winfield (Review)	50,000	0
NEW MEXICO		
Las Cruces	50,000	50,000
Pecos River and Tributaries - Carlsbad	300,000	300,000
Pecos River and Tributaries - Roswell	95,000	95,000
Rio Grande and Tributaries, NM & CO	500,000	0
OKLAHOMA		
Arkansas River and Tributaries, South Central and Southeast Areas	600,000	0
Canadian River and Tributaries, OK, TX and NM	155,000	0
Central Oklahoma Project	150,000	0
Hugo Lake (Review)	229,000	0
Red River Basin, OK, AR, TX & LA	800,000	0
TEXAS		
Brazos River and Tributaries	200,000	0
Buffalo Bayou and Tributaries	302,000	0
Cameron County	75,000	75,000
Colorado River and Tributaries	300,000	0
Dickinson Bayou	255,000	0
Hillebrandt Bayou and Tributaries	50,000	50,000
Little Cypress Creek, TX & LA	150,000	0
Little Fossil Creek	225,000	0
San Jacinto River and Tributaries	250,000	0

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These requested funds will provide for completion of five studies; the continuation of 11 studies at full Federal expense; the continuation of three feasibility studies in partnership with local sponsors; the initiation of the feasibility phase of five studies on a 50-50 cost sharing basis with local sponsors; and the initiation and completion of reconnaissance phase studies on one new study area. This compares with $6,572,000 in Federal funds and a local interest contribution of $230,000 that are scheduled for use on 26 studies in Fiscal Year 1986.

LITTLE FOSSIL, TEXAS

The Fiscal Year 1987 request includes $225,000 to initiate and complete the reconnaissance phase studies on the Little Fossil, Texas flood control study. The study will address water resource problems and needs in a 20 square mile area that includes the cities of Saginaw, Blue Mound and Haltom City. The area to be studied is located in the North Central part of Texas near Fort Worth. The reconnaissance phase studies are scheduled for completion in December 1987.

STUDY COMPLETIONS

The Fiscal Year 1987 request includes $986,000 for the completion of three flood control studies and two project review studies at full Federal expense. These studies and their scheduled completion date are as follows: Buffalo Bayou and Tributaries, Texas, June 1987; Dickinson Bayou, Texas, September 1987; Little Cypress Creek, Texas, March 1987; Review of the Hugo Lake, Oklahoma project, September 1987; and Review of the Winfield, Kansas project, June 1987.

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CONTINUING FEDERALLY FUNDED STUDIES

Included in the request for Fiscal Year 1987 is $4,330,000 for the continuation of study effort at full Federal expense on ten studies funded last year and the resumption of effort on one study. The ten studies are: Arkansas River and Tributaries, South Central and Southeast Areas of Oklahoma, Comprehensive Study; Arkansas River and Tributaries, Great Bend, Kansas to Tulsa, Oklahoma; Canadian River and Tributaries, Oklahoma, Texas and New Mexico; Central Oklahoma Project; Clarksville, Arkansas; Colorado River and Tributaries, Texas; Grand (Neosho) River, Kansas and Oklahoma; Red River Basin, Arkansas, Texas, Louisiana, and Oklahoma Comprehensive Study; Rio Grande and Tributaries, New Mexico and Colorado; and San Jacinto River and Tributaries, Texas. The Brazos River and Tributaries, Texas study is being resumed to examine the Leon, Little, and Lampasas Rivers which are tributaries of the Brazos River.

CONTINUATION OF PARTNERSHIP STUDIES

The Fiscal Year 1987 request includes $1,160,000 for the continuation of feasibility studies on three surveys (Arkansas River Basin, Arkansas and Oklahoma; Fountain Creek and Tributaries North of Pueblo, Colorado; and White River Basin, Arkansas and Missouri) in partnership on a 50-50 cost sharing basis with local sponsors. The requested funds, together with local sponsor contributions, will provide for a Fiscal Year 1987 program of $2,320,000 for these three studies and will permit completion

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of the: Arkansas River Basin study in September 1989; Fountain Creek study in September 1988; and White River Basin Study in September 1988. On the Arkansas River Basin and White River Basin Studies, negotiations with the local sponsors to obtain the necessary cost sharing agreements that are required prior to initiation of the feasibility phase of this study are underway. The Fountain Creek reconnaissance phase is scheduled to be completed in April 1986. A cost sharing agreement with a local sponsor will be obtained prior to initiation of the feasibility phase.

INITIATION OF PARTNERSHIP STUDIES

Included in the Fiscal Year 1987 request is $570,000 for the initiation of the feasibility phase on five studies in partnership on a 50-50 cost sharing basis with local sponsors. These requested funds, together with the local sponsor contributions, will provide for a Fiscal Year 1987 program of $1,140,000 and will permit meeting the scheduled completion dates on the five studies as follows: Cameron County, Texas, September 1989; Hillebrandt Bayou and Tributaries, Texas, September 1989; review of the Las Cruces, New Mexico project, June 1988; Pecos River and Tributaries, Carlsbad, New Mexico, September 1989; and Pecos River and Tributaries, Roswell, New Mexico, June 1990. Prior to initiation of the feasibility phase studies a cost sharing agreement with a specific local sponsor, consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, will be obtained on each of these studies.

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PECOS RIVER AND TRIBUTARIES, CARLSBAD, NEW MEXICO
PECOS RIVER AND TRIBUTARIES, ROSWELL, NEW MEXICO

Two of these studies, Pecos River and Tributaries, Carlsbad, New Mexico and Pecos River and Tributaries, Roswell, New Mexico were funded for initiation and completion of the reconnaissance phase studies at full Federal expense as a single study, Pecos River and Tributaries, New Mexico, in Fiscal Year 1985. Initial reconnaissance phase studies, however, revealed the single study should be divided into two separate studies because of the mutually exclusive nature of the flood problems at Carlsbad and Roswell and the identification of two separate local interest sponsors for these areas. In addition, the complexities of the study areas has delayed completion of the reconnaissance phase from June 1986 to November 1986 for Carlsbad and to June 1987 for Roswell.

HILLEBRANDT BAYOU AND TRIBUTARIES, TEXAS

In Fiscal Year 1986 Congress added funds to initiate the reconnaissance phase of this study. The study will consider extension of the authorized, but unconstructed, channel in Hillebrandt Bayou for the purpose of reducing flood damages in Beaumont, and also will consider major drainage improvements in Willow Marsh Bayou, a tributary of Hillebrandt Bayou. The reconnaissance phase is scheduled to be completed in July 1987.

The programed amount of $50,000 will be used to fund the Federal share, or 50 percent of the cost of the feasibility phase studies required in Fiscal Year 1987, that is needed to meet the scheduled completion date of September 1989. The feasibility phase studies are scheduled to be

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initiated upon completion of the reconnaissance phase studies and following an agreement by non-Federal interests to share 50 percent of the cost of the feasibility phase studies.

LAS CRUCES, NEW MEXICO

The programed amount of $50,000 for this study will be used to evaluate the completed Las Cruces project which consists of an earthfill dam with an uncontrolled outlet structure and a 4.7 mile long perched outlet channel that extends from the dam to the Rio Grande River through an urbanized area. The study will examine the possibility of improving the flood control operation by providing outlet control works. In Fiscal Year 1986, Congress directed the Corps of Engineers to use $50,000 of available funds to undertake a reconnaissance level study of the flood threat problem in the area of the outlet channel. These reconnaissance phase studies are scheduled to be completed in November 1986.

ARKANSAS RIVER AND TRIBUTARIES ABOVE JOHN MARTIN DAM, COLORADO

The request of $13,514,000 for the General Investigations Appropriations include $735,000 for the continuation of efforts on one Phase I Advance Engineering & Design project, Arkansas River and Tributaries above John Martin Dam, Colorado. These funds will be used to continue studies of the Main Stem of the Arkansas River in Colorado which has experienced severe flooding in the past and is generally characterized by wide flood plains in this reach of the river. This request compares with $450,000 provided for Fiscal Year 1986 activities and reflects the

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amount of funds required in Fiscal Year 1987 to meet the scheduled completion date of June 1989 for studies on the Main Stem portion of the project.

CONTINUATION OF PLANNING AND ENGINEERING

The request for Fiscal Year 1987 includes $3,563,000 for Continuation of Planning and Engineering effort on seven projects. This will permit the initiation of one project, continuation of five projects and the completion of one project. The cost of this Planning and Engineering effort will be included in the total cost of the project and subsequently cost shared with local sponsors in accordance with applicable law when construction of the project is accomplished. These projects are located as follows: continuation of one project in Arkansas; continuation of one project in New Mexico; completion of one project in Tulsa, Oklahoma; and continuation of three projects and the initiation of one project in Texas. The projects and amounts requested for Fiscal Year 1987 are listed below:

PROJECT	FY 1987 REQUESTED AMOUNT
ARKANSAS	
North Little Rock, (Dark Hollow)	$ 75,000
NEW MEXICO	
Middle Rio Grande, Bernalillo to Belen	475,000
OKLAHOMA	
Mingo Creek	423,000

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PROJECT	FY 1987 REQUESTED AMOUNT
TEXAS	
Brazos Island Harbor	$300,000
Sims Bayou at Houston	745,000
Texas City Channel	800,000
Upper White Oak Bayou and Tributaries, Vicinity of Houston	745,000

The funds requested compares with $3,644,000 allocated for this category for Fiscal Year 1986 and reflects the cessation of Planning and Engineering activities on Parker Lake, Oklahoma with funds made available in Fiscal Year 1986, because the project is essentially a local water supply project and therefore should be built by locals. Funds provided in Fiscal Year 1986 are also being used to complete the Continuation of Planning and Engineering effort on Fourche Bayou in the Vicinity of Little Rock, Arkansas which is included in the Fiscal Year 1987 construction program as a recommended new start.

NORTH LITTLE ROCK (Dark Hollow), ARKANSAS

The $75,000 programed for Fiscal Year 1987 will be used for Continuation of Planning and Engineering studies for a proposed plan to reduce flood damages in the Dark Hollow area. The proposed plan includes the construction of a new channel and outlet to drain the area. A reformulation report is scheduled for completion in May 1986. The first cost of the proposed plan is currently estimated at $27 million. The Continuation of Planning and Engineering effort is scheduled for completion in September 1988.

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MINGO CREEK, OKLAHOMA

Mingo Creek flows through the eastern part of Tulsa, Oklahoma and, on the average, floods about once every two-to-three years. Since 1959, ten major floods have been recorded. The flood of record occurred in May 1984, devasting the area in the Mingo Creek flood plain with damages estimated at $124,000,000 with five fatalities being attributed to flooding from Mingo Creek. The funds programmed for Fiscal Year 1987 will be used to complete detailed design efforts for the proposed project, which includes 23 detention ponds and 7.5 miles of channel improvements at selected spots on the tributaries and Main Stem of Mingo Creek. The proposed project has an estimated construction cost of $121,000,000 with a benefit-to-cost ratio of 2.5 to 1 at an interest rate of 8 5/8 percent. The Continuation of Planning and Engineering effort is scheduled for completion in May 1987.

SIMS BAYOU AT HOUSTON, TEXAS

The $745,000 programed in Fiscal Year 1987 will be used for the Continuation of Planning and Engineering studies for a proposed plan of improvement on Sims Bayou. The plan consists of improvements along 19.3 miles of Sims Bayou to provide flood protection and recreational opportunities to the area. This planning and engineering effort, for a proposed plan of improvement which has an estimated cost of $126,000,000 with a benefit-to-cost ratio of 9.1 to 1, is scheduled for completion in March 1989.

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BRAZOS ISLAND HARBOR, TEXAS

The Fiscal Year 1987 request will provide $300,000 for initiation of Continuation of Planning and Engineering activities on one project, Brazos Island Harbor, Texas which is located at Brownsville, Texas. The proposed plan of improvement provides for modifying the entrance channel from a depth of 36 feet to 44 feet at a width of 400 feet; the interior channel from 36 feet deep by 200 feet wide to 42 feet deep by 300 feet wide; and enlarging the turning basin area. The total cost of the proposed plan would be about $31,800,000 and result in a benefit-to-cost ratio of 1.5 to 1 at a 8 5/8 percent interest rate. Completion of Continuation of Planning and Engineering for the Brazos Island Harbor project is scheduled for March 1990.

TEXAS CITY CHANNEL, TEXAS

In Fiscal Year 1986 Congress added funds to initiate Continuation of Planning and Engineering studies on this project. The recommended plan provides for deepening the Texas City Turning Basin to 50 feet; enlarging the 6.7 mile-long Texas City Channel to 50 feet by 600 feet; deepening the existing 800-foot-wide Bolivar Roads Channel and Inner Bar Cannel to 50 feet; deepening the existing 800-foot-wide Outer Bar and Galveston Entrance Channels to 52 feet; extending the Galveston Entrance Channel at a 52-foot depth of 4.1 miles at a width of 800 feet and an additional 8.3 miles at a width of 600 feet; and the construction of an offshore emergency turning point. The plan also includes the establishment of 600

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acres of wetland and development of water-oriented recreational facilities on a 90-acre enlargement of the Texas City Dike.

Fiscal Year 1986 funds are being used to initiate studies to reaffirm project feasibility, reassess the current economic and projected conditions, validate environmental impacts, and to assure that the project is in compliance with laws and regulations that have been implemented since the study was completed. Funds requested for Fiscal Year 1987 will be used to complete reaffirmation studies and initiate design studies. The study effort is scheduled for completion in September 1988.

MIDDLE RIO GRANDE, BERNALILLO TO BELEN, NEW MEXICO

The Planning and Engineering effort initiated in Fiscal Year 1984 on the Bernalillo to Belen project would be continued with the $475,000 requested for Fiscal Year 1987. This project, when constructed, will provide protection from flooding to a large segment of the 110 square miles of the flood plain which adjoin the Rio Grande. The area to be protected has 41,000 residents and $811,000,000 in improvements and should the flood of record of April 1942 occur again, damages in excess of $85,000,000 could be expected if the project were not in place. Studies to date indicate the plan of improvement would consist of raising and strengthening about 62.3 miles of levees at an estimated cost of $44,900,000 and would have a benefit-to-cost ratio of 1.3 to 1 at an interest rate of 8 5/8% percent. The completion date for this Continuation of Planning and Engineering effort has been revised from September 1987 to September 1989 to permit completion of a feature design memorandum on the entire project rather than on a single reach as previously scheduled.

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ADVANCE ENGINEERING AND DESIGN

The General Investigation Appropriations request includes $1,945,000 for continuing Advance Engineering and Design efforts on five projects and the initiation of this effort on one project. These projects are located as follows: one in Kansas; three in New Mexico; and two in Texas. The project and amounts requested for Fiscal Year 1987 are listed below:

PROJECT	FY 1987 REQUESTED AMOUNT
KANSAS	
Douglass Lake	$265,000
NEW MEXICO	
Alamogordo	330,000
Rio Grande Floodway, San Acacia to Bosque Del Apache Unit	500,000
Rio Grande Floodway, Truth or Consequences Unit	200,000
TEXAS	
Rockland Lake	450,000
Trinity River, Channel to Liberty	200,000

This request compares with $1,483,000 provided in Fiscal Year 1986. The change in funding level reflects the recommended initiation of Advance Engi/ neering and Design effort on the Rio Grande Floodway, San Acacia to Bosque Del Apache, New Mexico project.

ALAMOGORDO, NEW MEXICO

In Fiscal Year 1986, Congress added funds to resume preconstruction planning efforts for this project. The proposed plan provides flood protection from the numerous arroyos which head on the western slopes of

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the Sacramento Mountains and flow through the City of Alamogordo causing extensive damages in a rapidly developing area of the city where existing drainage channels are already insufficient to handle any but the smallest amount of rainfall runoff. Due to development that has occurred on the project alignment since 1966, however, the project as was originally proposed is no longer practical. Therefore, with funds provided in Fiscal Year 1986, the authorized plan is being re-evaluated, as well as formulating and evaluating other viable solutions. The $330,000 programed for Fiscal Year 1987 will be used to continue the formulation and evaluation of alternative flood control plans, complete a Reformulation Report and initiate the General Design Memorandum. Preconstruction planning is scheduled for completion in December 1988.

RIO GRANDE FLOODWAY, SAN ACACIA TO BOSQUE DEL APACHE UNIT, NEW MEXICO

Funds in the amount of $500,000 are requested to initiate Advance Engineering and Design work on the San Acacia to Bosque Del Apache project. The project would consider the complete removal and replacement of the existing spoil bank levee established by the U.S. Bureau of Reclamation to separate the Rio Grande low-flow conveyance channel, which is the primary damageable property in the project area, from the cleared floodway. The project would extend from the upper end of the low-flow conveyance channel, at the San Acacia diversion works, to the lower end of the low-flow conveyance channnel at the head of Elephant Butte Reservoir, a distance of about 58 miles. Preconstruction planning is scheduled to be completed in July 1991.

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ROCKLAND LAKE, TEXAS

The Rockland project has been inactive since 1954. In 1980, however, local interests requested new studies be initiated. A review of the project determined that needs currently exist or will develop in the near future for flood control, water supply, recreation, and hydropower in the Neches River Basin and, subsequently, the project was reclassified to the active category. In Fiscal Year 1986 the project was selected as a new start Advance Engineering & Design project and work has started on the initial re-evaluation study which will be completed before starting on the general re-evaluation study. The report would reaffirm water resource needs, evaluate alternatives in compliance with Principles and Guidelines, provide a preliminary environmental assessment and cost allocation and apportionment, and evaluate the rationale for a Federal role.

The Fiscal Year 1987 amount of $450,000 will be used to begin the general re-evaluation study assuming the initial re-evaluation study identifies a viable project. In addition, the Hydrology Design Memorandum will be initiated.

TRINITY RIVER, CHANNEL TO LIBERTY, TEXAS

Funds in the amount of $200,000 are programed for Fiscal Year 1987 to continue engineering efforts on the Channel to Liberty portion of the Trinity River project. The preconstruction planning for the Channel to

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Liberty project is scheduled to be completed in September 1990. The remaining two elements of the Trinity River project, the Dallas Floodway Extension and the Tennessee Colony Lake, have been placed in the inactive category due to a lack of local support and due to extensive lignite deposits that exist in the lake area, respectively.

CONSTRUCTION, GENERAL

The Fiscal Year 1987 request for Construction, General in the amount of $122,220,000 would provide for construction activities on 22 projects including two Dam Safety Assurance projects, in the Southwestern Division. These funds, together with scheduled cash contributions of $22,335,000 from the local sponsors, will provide for a construction program of $144,555,000. The request will provide for the initiation of four projects; the continuation of construction on three projects that were added by the 1985 Supplemental Appropriations Act; the continuation of construction on 10 other projects; the continuation of Engineering and Design on two projects; and the continuation of construction on one project, Town Bluff Hydropower, Texas entirely with non-Federal funds. These projects are located as follows: two in Arkansas, Fourche Bayou and McClellan-Kerr Arkansas River Navigation System, Locks and Dams; two in Kansas, Great Bend and Halstead; one in Oklahoma, Arcadia Lake; and the remaining 15 in Texas, Clear Creek, Colorado River and Tributaries, (Boggy Creek At Austin), Cooper Lake, Corpus Christi Ship Channel, El Paso, Freeport Harbor, Joe Pool Lake, Lake Wichita (Holliday Creek), Mouth of Colorado River, Ray Roberts Lake, San Antonio Channel Improvement, San Gabriel River, Taylors Bayou, Town Bluff Hydropower, and Vince and Little Vince Bayous.

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This compares with the $92,782,000 in Federal funds allocated for Fiscal Year 1986 to the Southwestern Division for the Construction, General Appropriation category. This change in funding level is primarily due to the projects added by the 1985 Supplemental Appropriations Act and to the proposed four new construction starts.

CONSTRUCTION, GENERAL
NEW STARTS RECOMMENDED FY 1987

The request includes $5,160,000 for the initiation of construction on four local protection projects; Fourche Bayou, in the Vicinity of Little Rock, Arkansas; Great Bend, Kansas; Halstead, Kansas; and Lake Wichita, Holliday Creek, Texas. These projects will be constructed in partnership with local interests (consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership) who are scheduled to contribute $520,000 in cash during Fiscal Year 1987 and to also provide the necessary Lands, Easements, Rights-of-Way and Relocations. Three of these projects; (Fourche Bayou, Halstead and Lake Wichita, Holliday Creek) will require Congressional Authorization prior to initiation of construction. These projects and the requested amount of Federal funding for Fiscal Year 1987, together with the estimated non-Federal outlay for Fiscal Year 1987 are listed below:

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PROJECT	FY 1987 FUNDS REQUEST	FY 1987 NON-FEDERAL ESTIMATED COSTS 1/
	ARKANSAS	
Fourche Bayou in the Vicinity of Little Rock	$ 760,000	$1,150,000
	KANSAS	
Great Bend	2,600,000	5,300,000
Halstead	1,100,000	950,000
	TEXAS	
Lake Wichita, Holliday Creek, At Wichita Falls	700,000	1,700,000

1/ Includes Lands, Easements, Rights-of-Way, Relocations and Cash Contributions, as applicable.

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FOURCHE BAYOU IN THE VICINITY OF LITTLE ROCK, ARKANSAS

The survey report plan of improvement, which will require authorization prior to the initiation of construction, includes 4.6 miles of channel clearing and alteration of six bridges on Fourche Creek; 5.8 miles of channel clearing and alteration of two bridges on Grassy Flat Creek. The project has a total estimated first cost of $29,600,000, including an allowance for future inflation (Federal - $18,260,000 and non-Federal $11,340,000) with average annual benefits of $5,691,000 and a benefit-to-cost ratio of 2.1 to 1 at 8 5/8 percent interest rate.

The General Design Memorandum will be completed in May 1986. Studies to date indicate that the National Economic Development plan would include work along about 0.8 mile of Rock and Grassy Flat Creeks, and 4.9 miles of Fourche Creek and have a benefit-to-cost ratio of 1.25 at 8 3/8 percent interest rate. The total cost of this plan would be about $31,300,000, excluding an allowance for future inflation, of which the Federal share is about $14,700,000 and the non-Federal share is about $16,600,000.

The $760,000 funds requested for Fiscal Year 1987, together with a cash contribution of $20,000 from the local sponsor, will be used to complete the first set of plans and specifications and to award the first construction contract in June 1987. In addition, the local sponsor is scheduled to expend $800,000 for real estate activities and $330,000 for Engineering and Design of relocations during Fiscal Year 1987.

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GREAT BEND, KANSAS

The Great Bend, Kansas project, authorized in the Flood Control Act of 1965, is a system of levees and channels being designed to reduce the flood damages that occur frequently in the city. Major features of this local protection project, as authorized, consists of a total of 8.6 miles of leveed channel west of Great Bend to divert the Walnut and Little Walnut Creeks flood flows into the Arkansas River upstream of the City; from this confluence of the Walnut Creeks' diversion with the Arkansas River, 6 miles of improved channel with levees downstream along the Arkansas River and 7.3 miles of a tieback levee upstream along the north bank of the Arkansas River. The total estimated cost of this plan is about $59,300,000 (including an allowance for inflation during the construction period) of which about $43,500,000 would be Federal and $15,800,000 would be non-Federal costs, consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership. The final general design memorandum is scheduled for completion in March 1986.

Funds requested for Fiscal Year 1987 in the amount of $2,600,000, together with a cash contribution of $200,000 from the local sponsor, will be used to initiate the first contract for construction in January 1987. During Fiscal Year 1987 the local sponsor will also expend about $5,100,000 to obtain the necessary lands, easements, and rights-of-way and to initiate construction of required relocations.

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HALSTEAD, KANSAS

The Halstead, Kansas project for which funds are requested in Fiscal Year 1987, will require authorization prior to initiation of construction. The project, which consists of about four miles of earthen levees and 3.6 miles of channel modifications along the Arkansas River, has an estimated cost of $7,750,000 including an allowance for inflation (Federal - $5,812,000 and non-Federal - $1,938,000), average annual benefits of $1,278,000 and a benefit-to-cost ratio of 1.8 to 1 at 8 5/8 percent interest rate.

The request of $1,100,000, together with a cash contribution of $200,000 from the local sponsor, will be used to initiate the work in May 1987. In addition, the local sponsor is scheduled to expend about $750,000 in Fiscal Year 1987 for required lands, easements, rights-of-way and relocations associated with construction of this project.

LAKE WICHITA, HOLLIDAY CREEK, AT WICHITA FALLS, TEXAS

The proposed plan of improvement for this project, which will require authorization prior to construction initiation, includes the rehabilitation of the existing Lake Wichita Dam including the adding of a concrete spillway and low-flow outlets works. The plan also includes a nine mile grass-lined channel from the new spillway to the Wichita River along Holliday Creek. The total estimated cost of this plan, including an allowance for inflation, is $43,100,000 (Federal - $30,000,000 and non-Federal - $13,100,000). The plan would provide average annual benefits of $5,192,000 with a benefit-to-cost ratio of 1.3 to 1 at 8 5/8 percent interest rate.

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The $700,000 requested for Fiscal Year 1987, together with a local sponsor cash contribution of $100,000 will be used to initiate the first channel contract in June 1987. The local sponsor is scheduled to expend an additional $1,600,000 in Fiscal Year 1987 in obtaining a portion of the necessary lands, easements, and rights-of-way and in accomplishment of various relocations.

Studies on McGrath Creek, a tributary of Holliday Creek about 2 miles below the Lake Wichita Dam, are being accomplished with funds provided for the Lake Wichita, Holliday Creek Continuation of Planning and Engineering effort. These studies were added as a result of floods that occurred in May 1982 which caused more than $21 million in damages to the area. These studies which are nearing completion, indicate that a new spillway at Sikes Lake and a 0.9-mile concrete-lined channel (35 foot width) between the lake and the confluence with Holliday Creek would be the most cost effective plan. The plan would provide a 100-year level of flood protection in the most damage prone area of McGrath Creek. The current cost estimate is about $8.5 million with a benefit-to-cost ratio of 1.8 to 1 at 8 5/8 percent interest rate.

CONSTRUCTION, GENERAL
FY 1985 SUPPLEMENTAL APPROPRIATIONS ACT
NEW STARTS

Funds in the amount of $19,000,000 are requested to fund the Federal share of construction during Fiscal Year 1987 on four projects being initiated in accordance with Public Law 99-88, the Fiscal Year 1985 Supplemental Appropriations Act. The local sponsors are scheduled to

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make a cash contribution of $13,706,000 for construction activities during Fiscal Year 1987 on three of these projects; Boggy Creek at Austin, Texas; Clear Creek, Texas; and Freeport Harbor, Texas. Construction work on the fourth project, Town Bluff Hydropower, Texas is being funded entirely by local interests. The projects and the amounts requested for Fiscal Year 1987 are listed below:

FY 1985 SUPPLEMENTAL ACT
NEW CONSTRUCTION STARTS

PROJECT	FY 1987 FEDERAL FUNDS REQUEST	FY 1987 NON-FEDERAL ESTIMATED COSTS 1/
TEXAS		
Colorado River and Tributaries, Boggy Creek at Austin, TX	$ 900,000	$ 5,045,000
Clear Creek Channel, TX	8,200,000	11,990,000
Freeport Harbor, TX	9,900,000	4,016,000
Town Bluff Hydropower, TX	0	8,800,000

1/ Includes Land, Easements, Rights-of-way, Relocation and Cash Contribution, as applicable.

COLORADO RIVER AND TRIBUTARTIES, BOGGY CREEK AT AUSTIN, TEXAS

The plan of improvement for the project consists of approximately 1.1 miles of grass lined channel and 1.7 miles of paved channel. New or modified bridges will be required at five street crossings and at one railroad crossing. Funds to initiate construction were appropriated by the Fiscal Year 1985 Supplemental Appropriations Act. Construction of the project is being initiated in partnership with the local sponsor

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consistent with the cost sharing and financial concepts agreed to by the Administration and Senate Majority Leadership. The City of Austin, Texas is the local sponsor who has initiated land acquisition. In addition, through 30 September 1985, the City had completed two of the five bridges to be relocated. The construction contract for the initiation of the channel improvement is scheduled for award in May 1987. The local sponsor is scheduled to contribute $100,000 in cash toward construction activities in Fiscal Year 1987 and to expend $4,945,000 during the year on lands, easements, rights-of-way, and relocations. Completion of the entire project is scheduled for March 1990.

CLEAR CREEK, TEXAS

The project is located midway between Galveston and southeast Houston, Texas and includes more than 22 miles of channel improvement above and below the existing Clear Lake, together with a gated structure to control tide flows in the outlet channel from Clear Lake. Funds to initiate construction were appropriated by the Fiscal Year 1985 Supplemental Appropriations Act. The initial construction contract for an outlet structure from Clear Lake, is scheduled for award in August 1986. In an arrangement that is consistent with the cost sharing and financial concepts agreed to by the Administration and the Senate Majority Leadership, Galveston County, Harris County and Brazoria County Drainage District No. 4, the local sponsors, have expressed their intent to cooperate with construction of the project. The local sponsors are

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scheduled to expend $11,200,000 for lands and relocations and to contribute $790,000 in cash in Fiscal Year 1987. The $8,200,000 in Federal funds programed for Fiscal Year 1987, together with funds contributed by the local sponsors, will be used to continue construction of the outlet structure from Clear Lake, initiate the relocation of two railroad bridges and initiate channel rectification.

FREEPORT HARBOR, TEXAS

The plan of improvement for the project provides for the construction of 4,200 feet of a new North Jetty and removal of the existing North Jetty along the entrance channel, enlargement of the entrance channel to 400 feet wide and 47 feet deep; realignment, deepening, and widening of various existing channel and turning basins; construction of a new turning basin at the upper end; rehabilitation of the South Jetty; and required relocations.

Funds to initiate construction were appropriated by the Fiscal Year 1985 Supplemental Appropriations Act. Construction of the project is being accomplished with a cost sharing agreement with the local sponsor that is consistent with the cost sharing and financial concepts agreed to by the Administration and the Senate Majority Leadership. The local sponsor, the Brazos River Harbor Navigation District, agreed to provide required local cooperation of relocating 3,700 feet of the North Jetty and for the deepening the remainder of the project; however, the local sponsor agreed to provide local cooperation for the deepening only if enabling legislation for recovery of all or part of the costs to be expended by the project sponsor is enacted. Initiation of construction

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is scheduled for July 1986. The initial contract consists of relocating the North Jetty and rehabilitation of the South Jetty. Federal funds in Fiscal Year 1987 will be used to continue the jetty contract, and to initiate relocation of the Coast Guard Station. The local sponsor is scheduled to expend $1,506,000 for lands and damages and contribute $405,000 in Fiscal Year 1986. In Fiscal Year 1987 the local sponsor is scheduled to contribute $4,016,000 in cash to continue construction activities. The entire project is scheduled for completion in September 1991.

TOWN BLUFF HYDROPOWER, TEXAS

The authorized project modification of an existing project, (Town Bluff Dam and B. A. Steinhagen Lake), which is operated to regulate releases from the Sam Rayburn project, is scheduled to be initiated in May 1986, using funds provided by the local sponsor. The plan of improvement consists of installing two 3,000 kilowatt generating units, intake and outlet facilities and switchyard equipment. The local sponsor deposited $16,700,000 on 19 December 1985. Of the deposited funds, $970,000 has been withdrawn from the escrow account to reimburse the Federal Government in Fiscal Year 1986 for design costs to date. Also in Fiscal Year 1986, approximately $2,800,000 additional funds will be withdrawn from the escrow account for fabricating the turbine-generator units and construction of the powerhouse. In Fiscal Year 1987, approximately $8,800,000 will be withdrawn to continue fabrication of the turbine-generator units and construction of the powerhouse. No Federal funds were requested for Fiscal Year 1987, nor will they be required in subsequent years for construction of the project.

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CONTINUING CONSTRUCTION

The Fiscal Year 1987 request includes $91,100,000 to continue twelve projects that were funded in prior fiscal years. These projects are located as follows: one in Arkansas and Oklahoma; one in Oklahoma; and ten in Texas. The requested amount for Fiscal Year 1987 compares with the $ 82,172,000 allocated to these projects in the current year and reflects increased needs on several projects including San Antonio, Texas, Joe Pool Lake, Texas, and Taylors Bayou, Texas, partially offset by declining requirements for the Ray Roberts Lake, Texas project as it nears completion. These projects and their Fiscal Year 1987 funding requirements are as follows:

PROJECT	FY 1987 FUNDING REQUEST	FY 1987 NON-FED ESTIMATED COSTS 1/
ARKANSAS AND OKLAHOMA		
McClellan-Kerr Arkansas River Navigation Systems, Locks and Dams	$2,000,000	$ 0
OKLAHOMA		
Arcadia Lake	5,900,000	0
TEXAS		
Cooper Lake	3,700,000	0
Corpus Christi Ship Channel	7,000,000	1,133,000
El Paso	500,000	7,000,000
Joe Pool Lake	9,700,000	3,450,000
Mouth of Colorado River	4,700,000	970,000
Ray Roberts Lake	34,000,000	0
San Antonio Channel Improvements	11,600,000	4,700,000
San Gabriel River	600,000	0
Taylors Bayou	8,600,000	5,497,000
Vince and Little Vince Bayous	2,800,000	0

1/ Includes Lands, Easements, Rights-of-Way, Relocations and Cash Contributions, as applicable.

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ARCADIA LAKE, OKLAHOMA

Construction of the Arcadia Lake project, which is located near Oklahoma City, is about 78 percent complete. Work on raising the Turner Turnpike continues to advance with completion of this relocation scheduled for this coming fall. All other county road locations, major utility relocations, and reservoir clearing are complete. The embankment and spillway contract is scheduled for completion continuing in Fiscal Year 1986. Closure was completed in October 1985 and deliberate impoundment of the conservation pool is scheduled for initiation in September 1986. Funds programed for Fiscal Year 1987 will be used to continue construction of recreation facilities and to complete all other major features of the project.

COOPER LAKE, TEXAS

Construction of the Cooper Lake project was initiated in Fiscal Year 1958 and is 18 percent complete. Prior to being enjoined from further construction in 1971, most land purchases required for the project, together with the channel work downstream from the dam, had been completed. On 16 July 1984, the injunction was dissolved and construction of the remaining portion of the project could, therefore, be resumed. Physical construction at the project was resumed in April 1985 with the award of a contract to construct the south access road to the dam which is essentially complete. Funds programed for Fiscal Year 1987 will be used to: continue land purchases and utility relocations; initiate construction of the initial embankment contract in January 1987;

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complete the north access road (scheduled for initiation in August 1986); and accomplish detail design for major features of the project that are scheduled for initiation of construction in subsequent years.

CORPUS CHRISTI SHIP CHANNEL, TEXAS (1968 ACT)

The overall project is 57% complete. Construction of retaining dikes around various areas that are required for disposal of the dredged material is underway, with two of the disposal areas having been completed. Construction of retaining works for another disposal area, Suntide, will be initiated in May 1986. The initial contract for dredging the inner-channel from Beacon 82 through the Chemical Turning Basin is nearing completion. Funds programed for Fiscal Year 1987 will be used to complete construction of the retaining dikes for dredged material at the Suntide disposal area and to initiate dredging of the inner harbor channel from the Chemical Turning Basin and Tule Lake Turning Basin in January 1987. The entire project (except the unscheduled second mooring area) is scheduled for completion in December 1988.

MOUTH OF COLORADO RIVER, TEXAS

The Mouth of Colorado River project is located near Matagorda, Texas on the Gulf Coast. Construction of the East and West Jetties at the Navigation Channel entrance are essentially complete. In Fiscal Year 1986, a contract for construction of a jetty walkway on the east jetty is scheduled for award in June 1986 and a contract to initiate dredging of the diversion channel to Matagorda Bay is scheduled for award in August 1986.

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The programed Fiscal Year 1987 funds will be used to: complete the jetty walkway; continue dredging of the diversion channel; initiate dredging of the navigation Jetty entrance channel and impoundment basin in October 1986; initiate construction of the diversion dam and the connection channel to the Gulf Intracoastal Waterway; and to initiate and complete dredging of the turning basin. The entire project which is scheduled for completion in March 1989, is about 45 percent complete.

TAYLORS BAYOU, TEXAS

Construction of the project is 20 percent complete with work on the salt water gate and dredging of the discharge channel in the Gulf Intracoastal Waterway underway. The initial channel rectification contract for work on Taylors Bayou is scheduled for award in March 1986. Funds programmed in Fiscal Year 1987 will be used to continue channel rectification of Taylors Bayou and to initiate channel rectification work on the Hillebrandt Bayou portion of the project. The entire project is scheduled for completion in September 1990.

VINCE AND LITTLE VINCE BAYOUS, TEXAS

The project, in Pasadena, Texas, a suburb of Houston, is 62 percent complete with all work on Vince Bayou having been completed. Work on the Little Vince Bayou continues to progress with the initial contract scheduled for completion this fiscal year. An additional contract for work on the lower 0.7 miles of Little Vince Bayou was recently awarded and will also be completed with programed Fiscal Year 1986 funds. The

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final contract for construction work on the upper 1.5 miles of Little Vince Bayou is scheduled for initiation in June 1986 and will be continued with the requested funds. The project is scheduled for completion in December 1987.

JOE POOL LAKE, TEXAS

The Joe Pool Lake project is located in the Southern portion of the Dallas-Fort Worth Metroplex in Texas. The project is about 77 percent complete with construction work on the embankment nearing completion. Funds programed for Fiscal Year 1987 will be used, primarily to: continue land purchases; continue construction of the recreation facilities; initiate and complete the overlook and access roads; and to initiate visitors' overlook and project office. The project is scheduled for completion in June 1989.

RAY ROBERTS LAKE, TEXAS

The Ray Roberts project is located north of the Dallas-Fort Worth area between the towns of Sanger and Aubrey, Texas. The project is about 53 percent complete with construction on the embankment, spillway and outlet works scheduled to be completed in Fiscal Year 1986, and initiation of deliberate impoundment scheduled for July 1987. In Fiscal Year 1986: land acquisition will continue; alteration of a major Farm-to-Market Road, FM 455, will be completed; other major road relocations, including U.S. Highway 377, Farm-to-Market Roads 3002 and 3442, 373, 922 and the Missouri Pacific Railroad relocation will be continued; and Farm-to-Market Road 423 will be initiated.

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The $34,000,000 programed for Fiscal Year 1987 will be used to: continue land acquisition and Farm-to-Market Road 423; initiate boundary delineation and plug oil wells; complete Farm-to-Market Roads 3002, 3442, 372, and 922, County Roads 3 and 29, and the Missouri Pacific Railroad relocation; initiate and complete the Fish and Wildlife Enhancement Facilities; and to initiate construction of the recreation facilities by awarding a contract for construction of Part I in December 1986. Overall project completion is scheduled for April 1990.

SAN ANTONIO CHANNEL IMPROVEMENT, TEXAS

The project is 80 percent complete. Studies to date indicate the cost of the project may increase by about $36 million; however, construction of the tunnel will be less costly than proceeding with construction of an open channel through the metropolitan area, as originally proposed. The initiation of the tunnel contract for Units 8-4, 8-5 and 7-3-1 is scheduled for award in August 1986. In Fiscal Year 1987, the tunnel contract will be continued. The project is scheduled for completion in June 1990.

SAN GABRIEL RIVER, TEXAS

The project consists of a system of three lakes. Two of the lakes have been completed, Granger Dam and Lake in May 1983 and North San Gabriel Dam and Lake Georgetown in January 1983. The third lake, South Fork has not been started and it is being reevaluated. Current investigations on South Fork indicate the most economical alternative for providing water supply will be to raise the pool at Granger Lake. The

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San Gabriel River, as authorized, provided for reallocation of flood control storage from Granger Lake to South Fork Lake. These studies are scheduled for completion in September 1987.

DAM SAFETY ASSURANCE PROGRAM

The Fiscal Year 1987 request includes $6,960,000 for the completion of the modifications to one dam in New Mexico and for continuation of modifications at one project, which has two dams, in Texas. These projects are as follows:

PROJECT	FY 1987 FUNDING REQUEST
NEW MEXICO	
Jemez Canyon Dam	$2,060,000
TEXAS	
Buffalo Bayou and Tributaries (Addicks and Barker Dams)	4,900,000

JEMEZ CANYON DAM, NEW MEXICO

The Jemez Canyon project is located approximately 19 miles north of Albuquerque, New Mexico, on Jemez Creek, a tributary of the Rio Grande River. Modification of the project is necessary to provide adequate discharge capability and freeboard allowance to accomodate the probable maximum flood. Analysis made as a part of the Dam Safety Assurance program has revealed that, should a probable maximum flood occur, the existing structure would be overtopped by 11.5 feet of water for 13 hours and failure of the dam could result. Failure of the structure under these conditions would cause catastropic destruction in the downstream

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area. The recommended modifications include raising the top of the dam by 14.1 feet, adding a 3.0-foot high gabion wall at the upstream side of the dam crest for freeboard, and widening the existing spillway by 28 feet. Plans and specifications for the project modifications have recently been completed and a construction contract is scheduled for award in May 1986. The Dam Safety modifications are scheduled to be completed in April 1987 with the $2,060,000 programed in Fiscal Year 1987.

BUFFALO BAYOU AND TRIBUTARIES, TEXAS (ADDICKS AND BARKER DAMS)

The existing Addicks and Barker Dams and Reservoirs are located in and provide flood protection to a highly urbanized area, the Houston, Texas metroplex. Modification of the Addicks and Barker Dams is being accomplished as a result of an analysis of the dams, which has determined that these dams could fail if maximum rainfall conditions were to occur in the basin and result in a spillway design flood. Modification of the dams includes raising the main dam at Addicks, raising the main dam at Barker and armor-plating the ends of both structures. These proposed modifications will not diminish the current level of protection from flooding afforded by the two dams to the downstream area, nor will they materially increase the level of protection currently provided. Accomplishment of these modifications, however, will reduce the possibility that the structures could fail and, subsequently, release a wall of water through the urbanized area.

Funds currently available for Fiscal Year 1986 will be used to award a contract for raising the main dam at Barker in May 1986 and a contract for raising the main dam at Addicks in June 1986. The funds requested

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for Fiscal Year 1987 will be used to continue work on raising the dams and to award a contract for armor-plating the ends of Addicks in December 1986 and a contract for armor-plating the end of Barker in March 1987. The project is currently scheduled for completion in December 1988.

OPERATION AND MAINTENANCE

The Fiscal Year 1987 request for the Operation and Maintenance Appropriation for projects and activities in the Southwestern Division is $194,869,000. The requested funds will be divided among the major funding categories as follows: about 29 percent for Channels and Harbors along the Texas Gulf coast; more than 10 percent for Navigation Locks and Dams; about 31 percent for Flood Control Activities; more than 28 percent for Multiple Purpose Power Projects; and about 2 percent for Protection of Navigation including the Regulatory activities.

CHANNELS AND HARBORS

The Fiscal Year 1987 request for dredging and maintaining 12 projects along the Texas Gulf Coast is $55,577,000. These requested funds will provide for the continued maintenance of projects like the Houston Ship Channel, the Gulf Intracoastal Waterway and the Corpus Christi Ship Channel.

LOCKS AND DAMS

The request of $20,433,000 for Fiscal Year 1987 for this category will provide for the operation of 13 Locks and Dams and the channel on the McClellan-Kerr Navigation System. Funds to provide for the operation of the remaining four locks which are located at: the Dardenelle Lock

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and Dam Arkansas project; the Ozark-Jeta Taylor Lock and Dam, Arkansas project; the Roberts S. Kerr Lock and Dam and Reservoir, Oklahoma project; and the Webbers Falls Lock and Dam, Oklahoma project are included in the request for each of these projects in the Multiple Purpose Power Projects category. These requested funds will provide for operation and maintenance of the channels (including a portion of the channel that follows the White River in the lower reach) and the 13 Locks and Dams like the W.D. Mayo Lock and Dam in Oklahoma and Murray Lock and Dam in Arkansas. This navigation system, which consists of 13 Locks and Dams, four multiple purpose projects and a channel between the structures extends from the Mississippi River to the Head of Navigation at Catoosa, Oklahoma which is about 15 miles east of Tulsa.

FLOOD CONTROL

The request of $59,390,000 for Fiscal Year 1987 will provide for the continued operation and maintenance of 68 flood control projects and six other flood control activities. These 68 projects are located as follows: six in Arkansas; two in Colorado; eight in Kansas; one in Missouri; seven in New Mexico; 18 in Oklahoma and 26 in Texas. These requested funds will permit the effective operation of projects like the John Martin Dam in Colorado which collectively have provided an estimated $4,341,283,000 in flood damage prevention through Fiscal Year 1985. These projects like Grapevine Lake provide recreational opportunities to the public and serve other water resource purposes, including water supply storage at many projects. The projects have, in many cases, already prevented more in estimated flood damages prevention dollars than it cost to construct them as indicated for selected projects listed below:

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FLOOD CONTROL PAYBACK
($ Million)

PROJECT	TOTAL COST	FLOOD DAMAGES PREVENTED	PAYBACK RATIO
Nimrod Lake, AR	4.0	10.3	2.6
John Martin Reservoir, CO	15.6	71.9	4.6
Fall River Lake, KS	10.6	31.0	2.9
Clearwater Lake, MO	10.4	64.5	6.2
Abiquiu Dam, NM	26.7	71.0	2.7
Hulah Lake, OK	11.2	84.6	7.5
Grapevine Lake, TX	20.8	802.2	38.6

MULTIPLE-PURPOSE POWER PROJECTS

The Fiscal Year 1987 request for 18 multiple-purpose power projects in the Southwestern Division is $55,243,000. These projects are located as follows: six in Arkansas; one in Missouri; seven in Oklahoma; three in Texas; and one on the Texas-Oklahoma state line. Seventeen of these projects, like Bull Shoals Lake, in Arkansas have a total planned capacity of 1,700 megawatts and produced 7,458,908,400 kilawatt-hours last year. Hydroelectric generating facilities at the remaining project Town Bluff Dam - B. A. Steinhagen Lake are currently under construction.
These 18 projects, like Table Rock Lake in Missouri, and Webbers Falls Lock and Dam in Oklahoma, provide one or more other benefits, including those for flood control, recreation, water supply and navigation.

PROTECTION OF NAVIGATION

The request for the Protection of Navigation Category for Fiscal Year 1987 is $4,226,000 of which $4,166,000 will be used for the General Regulatory Function. These funds will be used primarily in connection with responsibilities associated with the wetlands of the Division area such as the marsh lands along the Gulf Intracoastal Waterway.

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SUMMARY

The Southwestern Division has a multitude of water resource problems and needs in an area that extends from Middle Kansas, as represented by the El Dorado Lake project, south to the Texas Gulf Coast, as represented by the Galveston Harbor project, and from the Rocky Mountains of Colorado, as represented by the Trinidad Lake project, east to the eastern parts of Arkansas and Missouri, as represented by the Clearwater Lake project in Missouri.

The Southwestern Division had a good year in Fiscal Year 1985. The professionals in this division executed a large program, meeting or exceeding goals important to the nation, from water resource planning for the future to use of small and disadvantaged businesses. Examples of these accomplishments are as follows:

FISCAL YEAR 1985 ACCOMPLISHMENTS

.Awarded 450 contracts valued at $500 Million (Civil Works and Military)

.Placed $150 Million in Civil Works Construction, including:

- $20 Million at Ray Roberts Lake
- 12 Million at Joe Pool Lake
- 8 Million at Arcadia Lake
- 7 Million at Mouth of Colorado

.Completed 267% of scheduled Feasibility Reports
.Completed 102% of Continuing Authorities Program
.Accomplished 187% of the Civil Works Value Engineering goal
.Accomplished 167% of Small and Disadvantaged Business Utilization goal

The request of $331 million together, with the contributions of the local sponsors, will help solve some of the problems and meet some of the water resource needs of the area.

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Justification of Estimates for Civil Functions Activities
Department of the Army, Corps of Engineers
Fiscal Year 1987

SUMMARY SOUTHWESTERN DIVISION

	FY 1986 Allocation	FY 1987 Request	Increase or Decrease
General Investigations			
Surveys Including Phase I Stage of AE&D	7,022,000	8,006,000	+984,000
Continuation of Planning and Engineering	3,664,000	3,563,000	-101,000
Advance Engineering and Design	1,983,000	1,945,000	-38,000
Construction, General			
Construction	92,782,000	115,260,000	+22,478,000
Major Rehabilitation (Continuing) and Dam Safety Assurance	4,000,000	6,960,000	+2,960,000
Operation and Maintenance, General			
Project Operation and Maintenance	178,802,000	194,869,000	+16,067,000
TOTAL	288,253,000 1/	330,603,000	+42,350,000

1/ Does not reflect reductions required by the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177)

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APPROPRIATION TITLE: General Investigations, Fiscal Year 1987 — Southwestern Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

1. SURVEYS - NEW

a. Navigation Studies: None.

b. Flood Damage Prevention Studies: The amount of $225,000 is requested in Fiscal Year 1987 for initiation of one study.

Texas

Little Fossil Creek, Vicinity of Haltom City	225,000	0	0	225,000	0

Little Fossil Creek originates near the northern city limits of Saginaw, Texas, and flows southeasterly through that city, through Blue Mound, across the northeast side of Fort Worth, and through Haltom City to its confluence with Big Fossil Creek, which is a tributary of the West Fork of the Trinity River. The watershed of Little Fossil Creek, has a drainage area of 18.6 square miles, an overall length of 13 miles, and a maximum width of approximately 2.5 miles. Haltom City has an estimated population of 29,000 and has experienced loss of physical property and human life as a result of flooding along Little Fossil Creek. The most notable storms which produced flooding and resultant property damage occurred in April 1958, February and September 1962, March 1968, July 1975, and October 1981. As the upper watershed is further developed with industrial parks and residential areas, peak flows on the creek will increase and flood problems will become more frequent and more critical in the lower portion of the watershed. Flooding on July 25, 1975 caused damages estimated at $410,000 ($700,000 October 1985 prices) and the recent flooding of October 1981 caused damages in excess of $10,000,000 ($11,400,000 October 1985 prices). Local interests desire improvements to reduce the threat of future damage in Haltom City from floods on Little Fossil Creek. This study is a new start in Fiscal Year 1987 and funds will be utilized to initiate the reconnaissance phase of study development. The reconnaissance phase is scheduled to be completed in December 1987.

SUBTOTAL FLOOD DAMAGE PREVENTION STUDIES	225,000	0	0	225,000	0

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
c. Shoreline Protection Studies: None.					
d. Special Studies: None.					
e. Comprehensive Studies: None.					
f. Project Review Studies: None.					
TOTAL SURVEYS - NEW	225,000	0	0	225,000	0

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	↓	↓	↓	↓	↓

2. SURVEYS - CONTINUING

a. Navigation Studies: The amount of $150,000 is requested in Fiscal Year 1987 for continuation of one study.

Oklahoma

Central Oklahoma Project	2,570,000	1,670,000	90,000	150,000	660,000

This is a long-range study of the feasibility of providing navigation and conveyance of water into the central portion of the State of Oklahoma. Studies for a navigation channel from the McClellan-Kerr Arkansas River Navigation System to the vicinity of Oklahoma City have shown that costs would exceed benefits. The navigation studies were suspended in Fiscal Year 1974. However, local interests were allowed time to review material for items or omissions which might have changed the findings. Studies of providing facilities for transbasin diversion of water from the tributaries of the Red River in Oklahoma below Denison Dam to the vicinity of Oklahoma City will be continued on receipt of funds. Alternative plans include lakes for water supply, diversion of water enroute for domestic and industrial water supply, irrigation, and allied purposes. The study cost estimate has increased $30,000 due to price levels. Fiscal Year 1986 funds are being used to resume the feasibility phase of the study. The funds requested for Fiscal Year 1987 will be used to continue the feasibility phase of the study. The study report of the Division Engineer is scheduled for completion in September 1989.

SUBTOTAL NAVIGATION STUDIES	2,570,000	1,670,000	90,000	150,000	660,000

2. SURVEYS - CONTINUING

b. Flood Damage Prevention Studies: The amount of $4,767,000 is requested in Fiscal Year 1987 for completion of three studies and continuation of 14 studies.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	
Arkansas					
Arkansas River Basin, Arkansas & Oklahoma	1,360,000	310,000	100,000	550,000	400,000

The study area is the lower Arkansas River drainage basin in Oklahoma and Arkansas. The problems of the basin to be studied are associated with navigation, flood damage reduction, and water supply. The towing industry has repeatedly identified major navigation problems related to the magnitude and duration of flows above 75,000 cfs. Because of the physical and legal limitations of the multipurpose system of reservoirs in Oklahoma and because the system storage capability is small relative to the average annual flow of the system, any major changes in the system operation need to be evaluated in terms of the impacts on other project purposes of the system. Additional storage to better regulate flows also needs to be investigated. Flood control studies will analyze urban flood damage reduction needs. These studies will also address the need for rehabilitation of levees along the Arkansas River in Arkansas that were built immediately prio. to World War II and are nearing the end of their original economic life of 50 years. Many of the drainage structures associated with these levees are deteriorating. The study will also formulate a plan which has as its key element the integration of water quality and water quantity activities throughout the study area, for the best management, development, and conservation of area's water and related land resources. It will address storage, conservation, treatment, conveyance of water for municipal, industrial, agricultural, and other beneficial purposes. The total study cost estimate has increased $160,000 of which $60,000 is for price levels and $100,000 is for an increase in the scope of the feasibility phase of the study for more extensive navigation studies.

Fiscal Year 1984 funds were used to fully fund the reconnaissance phase at full Federal expense. The feasibility phase is being initiated at Federal expense in Fiscal Year 1986 upon agreement by the local sponsor to share 50 percent of the cost of the feasibility phase after cost sharing is implemented. The effective date of implementation is 15 March 1986. The funds requested for Fiscal Year 1987 will be used to continue the Federal share of the feasibility phase of the study. The estimated cost of the feasibility phase is $2,000,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost $2,310,000
Reconnaissance Phase (Federal) 310,000
Feasibility Phase (Federal) 1,050,000
Feasibility Phase (Non-Federal) 950,000

The reconnaissance phase is scheduled to be completed in February 1986. The feasibility phase is scheduled for completion in September 1989.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Arkansas (Continued)					
Clarksville	900,000	388,000	267,000	175,000	70,000

The area under consideration encompasses Johnson County, Arkansas, and specfically the city of Clarksville. Clarksville is located approximately 100 miles northwest of Little Rock Arkansas, and 60 miles east of Fort Smith, Arkansas. The Corps study will address flood problems as well as regional water supply, recreation, and fish and wildlife resources. A flood control levee and floodwall on Spadra Creek have not provided adequate flood protection. At least twice in the last ten years the flow in the creek has come near to overtopping the levee of floodwall. Local interests have stated that flooding occurs along Greenbrier Creek which flows into Spadra Creek and Blue Creek, which flows through Clarksville and into the Arkansas River. Local interest believe that an additional water supply source will be required in the near future. Since 1968 several industries have moved into Clarksville with corresponding community growth. In addition, Clarksville has become a regional supplier of water for nearby communities. The water supply study conducted during the reconnaissance phase; however, concluded that the study area had no net water supply needs through 2040. The total study cost estimate has decreased $125,000 due to an increase of $25,000 for price levels, offset by a decrease of $150,000 due to reduced scope of the study. Fiscal Year 1986 funds are being used to continue the feasibility phase studies and the draft Environment Impact Statement. The funds requested for Fiscal Year 1987 will be used to continue the feasibility phase studies. The study report of the Division Engineer is scheduled for completion in June 1988.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Colorado					
Fountain Creek and Tributaries North of Pueblo	680,000	295,000	40,000	210,000	135,000

This survey was authorized by a resolution from the House Committee on Public Works and Transportation adopted on September 23, 1976. This resolution directs the Chief of Engineers to make studies for flood control and allied purposes in the Fountain Creek basin upstream from Pueblo, Colorado. Flooding in the watershed is characterized by high peak flows, moderate volumes and short durations. These floods are caused primarily by severe storms which occur during the summer months from May to August. Available records indicate that snowmelt has seldom contributed significantly to flood occurrences on Fountain Creek. The magnitude of floods can change drastically downstream from Colorado Springs, the area's principal city located high in the watershed. The damages incurred during the 1965 flood in the Fountain Creek Basin were estimated at $5,837,000 ($25,905,000 October 1985 prices) with one loss of life. Since the area is experiencing explosive growth both economically and in population, the flood damage potential to transportation facilities and residential, commercial and community property is increasing. By letter dated 6 September 1984, the State of Colorado expressed their continued support for this study. The State is fully aware of the Administration's cost sharing proposal for studies and indicated that they were looking forward to working with the Corps in partnership with local governments in seeking solutions to the basin's flood-related problems. The total study cost estimate has decreased $210,000 due to an increase of $33,000 for price levels, offset by a decrease of $243,000 due to reducing the number of study areas to be included in the feasibility phase. Based on the findings of the reconnaissance phase, feasibility phase studies will be initiated at Colorado Springs and Manitou Springs. The reconnaissance phase also revealed several Section 205 study sites in the Fountain Creek watershed above the City of Pueblo.

Fiscal Year 1984 and 1985 funds were used to fully fund the reconnaissance phase at full Federal expense. The feasibility phase is being initiated at Federal expense in FY 1986 upon agreement by the local sponsor to share 50 percent of the costs of the feasibility phase after cost sharing is implemented. The effective date of implementation is 15 March 1986. The funds requested for Fiscal Year 1987 will be used to continue the Federal share of the feasibility phase of the study. The estimated cost of the feasibility phase is $770,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost $1,065,000
Reconnaissance Phase (Federal) 295,000
Feasibility Phase (Federal) 385,000
Feasibility Phase (Non-Federal) 385,000

The reconnaissance phase is scheduled to be completed in April 1986. The feasibility study is scheduled for completion in September 1988.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Kansas					
Arkansas River and Tributaries, Great Bend, Kansas, to Tulsa, Oklahoma	7,290,000	4,783,000	535,000	600,000	1,372,000

This portion of the Arkansas River Basin, including the Cimarron River Basin, has a drainage area of 38,600 square miles and includes approximately 890,000 acres of flood-prone land. Major floods occur about once in three years in the upstream area and about once in seven years in the downstream area, inundating rural and urban areas. The study will determine short- and long-range water resources development plans for meeting basin needs including improvements for extension of navigation, flood control, water supply, irrigation, recreation, hydroelectric power, and allied uses. Studies completed to date show that costs for extending navigation from McClellan-Kerr Arkansas River Navigation System would exceed benefits, and those studies have been suspended. Eleven potential feasible projects have been identified. These include a local flood protection project at Halstead, Kansas (interim report and supplement have been forwarded by the Corps of Engineers to the Assistant Secretary of the Army's Office), a small dam watershed flood control project for the Little Arkansas River, the installation of hydropower at Kaw Lake, Arkansas City Levee project, and seven large flood control, water supply, and recreational lake projects in Kansas (Arlington, Cunningham, Norwich, Wellington, Arkansas City, Silverdale, and Grouse Creek Lakes). These study projects are to be included in the development of a comprehensive water resource plan for the basin. The study cost estimate has increased $90,000 for price levels. Fiscal Year 1986 funds are being used to continue collection of data for multiple-purpose lakes. The funds requested for Fiscal Year 1987 will be used to continue collection of base data and initiate development of alternatives on seven multiple-purpose sites in Kansas. Interim reports for the Upper Little Arkansas River Watershed and the Arkansas City Levees have been approved by the Board of Engineers for Rivers and Harbors and are currently under review in the Assistant Secretary of the Army's Office. The Kaw Lake Hydropower interim was deferred in April 1985 pending construction of a hydropower project by non-Federal interests. The Multi-purpose Lakes interim and the comprehensive study report of the Division Engineer is scheduled for completion in March 1991.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Kansas (Continued)					
Grand (Neosho) River, Kansas and Oklahoma	3,660,000	574,000	276,000	600,000	2,210,000

The Grand (Neosho) River has a contributing drainage area of 12,500 square miles. The study is considering short- and long-range plans of water resource development to meet basin needs for flood control, water supply, water quality control, irrigation, recreation, bank stabilization, and other allied uses. Although existing multiple-purpose projects have been provided in the upper and lower portions of the basin, there remains about 470,000 acres of land in the flood plain which need protection. An urgent basin water resource problem is the need for a system of small dams above John Redmond Reservoir. Investigation efforts will be concentrated on a plan to provide for a system of small dams in this area. Kansas State's water supply studies show a water need for Neosho, Crawford, Wilson, Woodson, Montgomery and Lyon Counties by 1990 and Labette and Coffey Counties by 1995. These areas comprise one of the three highest priority areas in the state for solving water supply deficiencies. The study cost estimate has increased $110,000 for price levels. Fiscal Year 1986 funds are being used to continue the reconnaissance phase of the study for the area above John Redmond Dam and Reservoir and initiate water supply and source studies. The funds requested for Fiscal Year 1987 will be used to complete the reconnaissance phase and water supply and source studies and to initiate the feasibility phase of the area above John Redmond Dam and Reservoir. The study report of the Division Engineer is scheduled for completion in September 1992.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
New Mexico					
Pecos River and Tributaries, Carlsbad	720,000	200,000	0	300,000	220,000

The survey was authorized by a resolution of the Committee on Environment and Public Works adopted on May 8, 1984. The source of the Pecos River is in the Sangre de Cristo mountain range in Mora County, northern New Mexico, where some of the mountain peaks rise to about 13,000 feet. From its source, the river flows in a southeast direction for about 925 miles through eastern New Mexico and western Texas to its confluence with Rio Grande at the International Boundary between the United States and Mexico. Recent flood plain studies associated with the flood insurance program have shown that there exists unresolved flood problems in the watershed. Specific flood problems occur at the City of Carlsbad, New Mexico. At Carlsbad almost 2,700 acres of urban land lie within the standard project flood floodplain. A serious flood threat is from Dark Canyon Draw, a tributary of the Pecos River in Carlsbad. Intense thunderstorms can produce a wall of water which converges on the city at the mouth of the canyon. Recorded floods on Dark Canyon Draw occurred in 1906, 1908, 1911, 1915, 1916, 1919, 1925, 1941, and 1966. The flood of 1941 claimed 20 lives. Studies will determine needs for improvements for flood control, recreation, and fish and wildlife conservation. Lakes, diversion channels, levees and channel rectification works and nonstructural alternatives will be studied to find solutions to the water resource problems in the study area. The total study cost estimate has increased $40,000 due to price levels.

Fiscal Year 1985 funds were used to fully fund the reconnaissance phase at full Federal Expense. Fiscal Year 1986 activities include continuation of the reconnaissance phase of the study. The funds requested for 1987 will be used to initiate the feasibility phase of the study upon completion of the reconnaissance phase. The preliminary estimated cost of the feasibility phase is $1,040,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of the study cost sharing is as follows:

Total Estimated Study Cost	$1,240,000
Reconnaissance Phase (Federal)	200,000
Feasibility Phase (Federal)	520,000
Feasibility Phase (Non-Federal)	520,000

The reconnaissance phase is scheduled to be completed in November 1986. The feasibility study is scheduled for completion in September 1989.

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
New Mexico (Continued)					
Pecos River and Tributaries, Roswell	825,000	200,000	0	95,000	530,000

The survey was authorized by a resolution of the Committee on Environment and Public Works adopted on May 8, 1984. The source of the Pecos River is in the Sangre de Cristo mountain range in Mora County, northern New Mexico, where some of the mountain peaks rise to about 13,000 feet. From its source, the river flows in a southeast direction for about 925 miles through eastern New Mexico and western Texas to its confluence with Rio Grande at the International Boundary between the United States and Mexico. Recent floodplain studies associated with the flood insurance program have shown that there exists unresolved flood problems in the watershed. Specific flood problems occur at the City of Roswell, New Mexico. Most of the residential, business, and public properties at Roswell are subject to flood damage. The flood insurance study for Roswell completed in 1982 indicates that the major sources of flooding, Rio Hondo and North Spring River, have channel capacities through the city inadequate to handle the 10-year and 20-year flows, respectively. Studies will determine needs for improvements for flood control, recreation, and fish and wildlife conservation. Lakes, diversion channels, levees and channel rectification works and nonstructural alternatives will be studied to find solutions to the water resource problems in the study area. The total study cost estimate has increased $50,000 due to price levels.

Fiscal Year 1985 funds were used to fully fund the reconnaissance phase at full Federal Expense. Fiscal Year 1986 activities include continuation of the reconnaissance phase of the study. The funds requested for 1987 will be used to initiate the feasibility phase of the study upon completion of the reconnaissance phase. The preliminary estimated cost of the feasibility is $1,250,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of the study cost sharing is as follows:

Total Estimated Study Cost	$1,450,000
Reconnaissance Phase (Federal)	200,000
Feasibility Phase (Federal)	625,000
Feasibility Phase (Non-Federal	625,000

The reconnaissance phase is scheduled to be completed in June 1987. The feasibility study is scheduled for completion in June 1990.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
New Mexico (Continued)					
Rio Grande and Tributaries, New Mexico and Colorado	7,070,000	5,318,000	450,000	500,000	802,000

The Rio Grande Basin above the International Boundary near El Paso, Texas, includes about 7,500 square miles in south-central Colorado and 31,500 square miles in New Mexico. The Bureau of Reclamation's San Juan-Chama Diversion project is diverting an average of 110,000 acre-feet of water annually from the Colorado River Basin through the Continental Divide into the Rio Grande Basin. The imported water is used for supplemental irrigation and municipal and industrial use in New Mexico and to maintain pools in Cochiti Lake and Elephant Butte Lake for recreation and fish and wildlife enhancement. Studies will determine needs for improvements for flood control, irrigation, municipal and industrial water supply, hydropower, recreation, and fish and wildlife conservation. Lakes, diversion channels, levees and channel rectification works, water conservation measures, and nonstructural alternatives will be studied to find solutions to the remaining water resource problems in the Rio Grande Basin. The Middle Rio Grande Flood Protection, Bernalillo to Belen, New Mexico, interim study was completed in September 1979 and was forwarded to the Assistant Secretary of the Army in June 1981. The Abiquiu Reservoir Review Survey was suspended in 1982 because of the lack of a study sponsor, but is being resumed in Fiscal Year 1986 at the request of all three Rio Grande Compact Commissioners and the City of Albuquerque. The Albuquerque Greater Urban Area Report was completed in Fiscal Year 1982 and a summary report will be included in the final report. The Remainder Colorado interim study will address water conservation and flood control concerns in the Rio Grande Basin of Colorado. Work on the Grants-Milan interim study has indicated no feasible alternative could be developed. The Cochiti Dam Hydropower draft report was completed in February 1984 and further studies were terminated due to opposition of the Cochiti Indians. These subjects will be fully addressed in the final report. The study cost estimate has increased $350,000 due to increases of $50,000 for price levels and $300,000 for remaining requirements to complete the Abiquiu Reservoir Review Survey. Fiscal Year 1986 funds are being used to resume the Abiquiu Reservoir Review Survey and to continue feasibility phase studies on the Remainder Colorado and Remainder New Mexico interims. The funds requested for Fiscal Year 1987 will be used to continue the study efforts on the Abiquiu Reservoir Review Study and the Remainder Colorado and Remainder New Mexico interims. Interim reports are scheduled for completion in May 1988 for the Remainder Colorado, September 1988 for the Abiquiu Reservoir Review Survey and September 1990 for the Remainder New Mexico. The study report of the Division Engineer is scheduled for completion in September 1990.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Oklahoma					
Canadian River and Tributaries, Oklahoma Texas, and New Mexico	2,760,000	2,033,000	400,000	155,000	172,000

This study includes the Canadian River Basin downstream of the New Mexico-Texas state line, an area of 26,843 square miles. Water resource problems include floods, droughts, bank caving, poor drainage, inadequate water supply for all purposes, insufficient water-oriented recreation opportunities, and fish and wildlife conservation. Existing projects in the study area include Lake Meredith, Norman Reservoir, Arcadia (under construction), Optima, Fort Supply, Canton, and Eufaula Lakes. In this study, specific emphasis will be given to Palo Duro Creek, Texas, (water supply, flood control, water quality, and recreation); Deep Fork River, Oklahoma (flood control, fish and wildlife, and drainage); twenty identified urban flood problems in Oklahoma City; and bank stabilization at isolated locations on the North Canadian River below Oklahoma City, South Canadian below Eufaula and in Grady and Canadian Counties, Oklahoma, and on Little River. Studies were initiated in Fiscal Year 1980 on Fort Supply to determine economic feasibility of including water supply storage but were suspended because it was determined that there was no need for additional water supply facilities. Oklahoma City floodway extension studies were discontinued in 1977 because of an unfavorable benefit-cost ratio; however, because of economic development in the flood plains, the study was re-evaluated and was found to be not economically justified again. The Deep Fork River study was suspended in January 1980 because of lack of public interest. The study was resumed in Fiscal Year 1983 because of renewed local and Congressional interest in flood control problems in the Deep Fork area. Fiscal Year 1986 funds are being used to continue the feasibility phase of the Deep Fork River study. The funds requested for Fiscal Year 1987 will be used to complete the feasibility phase of the Deep Fork River Interim. The study cost estimate has increased $90,000 due to $26,000 for price levels; $8,000 for additional study needs for the Deep Fork interim; $40,000 for review and coordination of the Palo Duro interim report with the Board of Engineers for Rivers and Harbors; and $16,000 to review the authorized Crutcho Creek project for possible deauthorization under Section 12, Public Law 93-251. The Palo Duro interim report was approved by the Board of Engineers for Rivers and Harbors in June 1984. The reconnaissance phase of the Deep Fork River study was completed in November 1984. An interim report is scheduled for completion for Deep Fork River in March 1987. The study report of the Division Engineer is scheduled for completion in March 1989.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Texas					
Brazos River and Tributaries	8,070,000	6,014,000	0	200,000	1,856,000

The Brazos River Basin is a 44,640 square mile drainage area that extends from eastern New Mexico 640 miles southeasterly across the State of Texas to the Gulf of Mexico. The basinwide study will determine needs for improvements for flood control, hydroelectric power, municipal and industrial water supply, navigation, irrigation, water quality, recreation, fish and wildlife conservation, and flood release restrictions, and develop solutions for these needs. The Corps of Engineers has completed and operates nine lakes in the basin, namely Aquilla, Belton, Georgetown, Granger, Proctor, Somerville, Stillhouse Hollow, Waco, and Whitney. Interim reports have been completed on the Plainview Local Flood Protection, Aquilla Lake, and Natural Salt Pollution Control. Recent investigations have resulted in a favorable recommendation for the Waco Lake Storage Reallocation in Fiscal Year 1984 and the unfavorable recommendation for addition of hydropower at Belton Lake in Fiscal Year 1984. The total study cost has been increased $80,000 for price levels. The Fiscal Year 1987 amount would be used to initiate studies of water related problems on the Little, Leon, and Lampasas Rivers. This study was requested by the local sponsor, the Brazos River Authority, in September 1984. The study report of the Division Engineer is scheduled for completion in November 1991.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Texas (Continued)					
Buffalo Bayou and Tributaries	6,680,000	5,478,000	900,000	302,000	0

The comprehensive study addresses the feasibility of flood control throughout the Buffalo Bayou watershed, a part of the Houston Metropolitan area. The authorized project for Buffalo Bayou and Tributaries includes Addicks and Barker Dams and channel rectification in Brays, Buffalo, and White Oak Bayous. An authorization provides for improvement of Vince and Little Vince Bayous, which are tributaries to Buffalo Bayou. The authorized improvements provide improved drainage to less than 50 percent of the watershed. The major portion of watershed is within the city limits of Houston, Texas. Residential and commercial development in Houston has increased at a rapid rate and is expected to continue. When rainfall of moderate intensity occurs, damaging floods can be expected. Stream flooding has caused extensive damages to residential development in Upper White Oak Bayou above the terminus of the constructed channel improvement project. An interim feasibility report recommending a channel rectification project on Upper White Oak Bayou was submitted to Congress in August 1979, and has been published as House Document No. 96-182. Sims Bayou has received severe and damaging urban flooding three times since 1975, and an interim report, recommending channel improvements on Sims Bayou was approved by the Board of Engineers for Rivers and Harbors on 18 July 1983 and by the Chief of Engineers on 17 April 1984. Continuation of Planning and Engineering is being initiated in Fiscal Year 1986 for the Sims Bayou project. Flood problems in other areas of the Buffalo Bayou watershed are being addressed, giving consideration to alternative plans involving structural improvements, flood plain management practices, and other nonstructural measures. The total study cost estimate has been increased $70,000 for price levels. Fiscal Year 1986 funds are being used to develop a full range of feasible alternative solutions to the widespread urban flooding problems in the basin to assess the environmental and social impacts of plans, to gain public input on solutions desired, and to prepare a draft feasibility report. The funds requested for Fiscal Year 1987 will be used to complete the feasibility study. The study report of the Division Engineer is scheduled for completion in June 1987.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Texas (Continued)					
Cameron County	495,000	200,000	0	75,000	220,000

Cameron County, in extreme south Texas, is a flat, coastal county with poorly defined drainage courses and is subject to frequent and prolonged flooding. It encompasses an area of approximately 900 square miles which is used extensively for agricultural purposes. The climate is semi-arid with an average growing season of 330 days. The county has been subjected to numerous flood events, the most notable event resulting from Hurricane Beulah in 1967. A total study cost estimate has not previously been submitted to Congress. Fiscal Year 1986 activities include completion of the reconnaissance phase of the study. The funds requested for Fiscal Year 1987 will be used to initate the feasibility phase of the study. The preliminary estimated cost of the feasibility phase is $590,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$790,000
Reconnaissance Phase (Federal)	200,000
Feasibility Phase (Federal)	295,000
Feasibility Phase (Non-Federal)	295,000

The reconnaissance phase is scheduled to be completed in May 1986. The feasibility study is scheduled for completion in September 1989.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Texas (Continued)					
Colorado River and Tributaries	5,600,000	4,966,000	300,000	300,000	34,000

The Colorado River Basin extends from southeastern New Mexico some 600 miles southeasterly across the State of Texas to the Gulf of Mexico. The basin has a total area of 42,344 square miles and ranges in width up to 175 miles. Completed efforts to date include a basinwide wastewater management study, approved by the Environmental Protection Agency on 4 December 1973, and a report recommending Boggy Creek channel modification, which was submitted to the Assistant Secretary of the Army on 4 February 1981. A general reevaluation of the interim report dated 5 May 1982 was submitted to the Southwestern Division and approved on 18 May 1982. Boggy Creek was included in the Fiscal Year 1985 Supplemental Appropriations Bill. Sufficient background data has been collected to identify basinwide problems and evaluate alternatives; however, only specific flood problems in the Austin, Texas, area appear to warrant further study as well as problems in Central Colorado River Basin. Near Austin, flooding occurs along Walnut, Shoal, Onion and Williamson Creeks. Walnut Creek Interim studies have led to the identification of feasibile projects in three separate locations. Given the financial scope of these projects, they can best be pursued under the Section 205, Continuing Authorities Program. Studies on Shoal Creek are nearing completion with the tunnel alternative showing the most promise at this time. Studies along Williamson and Onion Creeks are focusing on problem identification. A written request from the Lower Colorado River Authority was received in December 1985 requesting a re-evaluation of water resource problems in Central Colorado River Basin, Texas. The total study cost estimate has been increased $110,000, of which $40,000 is for price levels and $70,000 is to review needs of the basin and maintain coordination with state and local interests. Fiscal Year 1986 funds are being used to continue studies of Williamson and Onion Creeks, and to finalize the feasibility report on Shoal Creek. The funds requested for Fiscal Year 1987 will be used to conclude problem identification of Williamson and Onion Creeks. The interim report is scheduled for completion in December 1986 for Shoal Creek. The study report of the Division Engineer is scheduled for completion in September 1988.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Texas (Continued)					
Dickinson Bayou	1,130,000	625,000	250,000	255,000	0

Dickinson Bayou drains a 106-square mile coastal area in Galveston and Brazoria Counties and discharges into Dickinson Bay, an arm of Galveston Bay, about 15 miles northwest of Galveston, Texas. A large portion of the watershed is used for agricultural purposes, chiefly growing rice and raising cattle. The bayou is lined with trees from mile 5.5 to above mile 18 and this environmentally attractive area has been developed. The urban area along Dickinson Bayou had an estimated 1980 population of 19,000. The areas adjacent to the bayou and its tributaries are subject to flooding from tropical storm surges as well as rainfall runoff. Natural obstructions, such as trees, brush and silt, and man-made obstructions, such as highway embankments and bridge piers, impede the flow carrying capacity of the bayou and significantly contribute to the flooding problem. An existing, shallow-draft navigation project, Dickinson Bayou, Texas, provides a channel 6-feet deep, 60-feet wide and 11.4 miles long, extending from the natural 6-foot depth in Galveston Bay through Galveston and Dickinson Bays and Dickinson Bayou to the Galveston, Houston and Henderson Railroad bridge at Dickinson. The navigation project was completed in 1940. The total study cost estimate has been increased $30,000 for price levels. Fiscal Year 1986 funds are being used to conduct feasibility studies of the projects identified in the reconnaissance phase of the study. The funds requested for Fiscal Year 1987 will be used to complete the feasibility study. The study report of the Division Engineer is scheduled for completion in September 1987.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Texas (Continued)					
Hillebrandt Bayou and Tributaries	623,000	0	250,000	50,000	323,000

Hillebrandt Bayou has a drainage area of 147 square miles, including the western portion of the City of Beaumont in Jefferson County. The area has an average annual rainfall of 55 inches, and is subject to intense rainstorms of as much as 18 inches in 24 hours. Flooding was experienced in 1941, November 1946, June 1961, September 1963 (Hurricane Cindy), July 1979 (Tropical Storm Claudette), Spring 1980, January 1981, and January 1983. Hurricane Cindy produced a rainfall of about 20 inches in the vicinity of Beaumont, and caused almost $2,000,000 ($9,400,000 October 1985 prices) in damage (1963) to more than 800 homes and businesses. The most recent flooding, in January 1983, damaged 50 residential structures, 30 to 40 apartments, and forced evacuation of almost 100 persons in western Beaumont. The study will address urban flooding and major drainage. A total study cost estimate has not previously been submitted to Congress. Fiscal Year 1986 funds are being used to fully fund the reconnaissance phase at full Federal expense. The funds requested for Fiscal Year 1987 will be used to initiate the feasibility phase of the study. The preliminary estimated cost of the feasibility phase is $746,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Estimated Study Cost	$996,000
Reconnaissance Phase (Federal)	250,000
Feasibility Phase (Federal)	373,000
Feasibility Phase (non-Federal)	373,000

The reconnaissance phase is scheduled to be completed in July 1987. The feasibility study is scheduled for completion in September 1989.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Texas (Continued)					
Little Cypress Creek	1,750,000	1,435,000	165,000	150,000	0

Little Cypress Creek is a tributary of Cypress Bayou which empties into Caddo Lake. Above Caddo Dam, the Cypress Bayou Basin contains 2,780 square miles of hilly uplands in northwest Louisiana and northeast Texas. Four major reservoirs, Caddo Lake, Lake O' the Pines, Cherokee Trail Lake, and Lake Cypress Springs, exist within the basin. Existing resources will be insufficient to meet the demands for water supply after the year 1990. This study will encompass the entire Cypress Basin and will consider an expanded reservoir system for flood control, water supply, recreation, and other water resource purposes, including an analysis of ground water potential and conservation measures for increasing existing water supplies. The total study cost has been increased $20,000 for price levels. Fiscal Year 1986 funds are being used to complete detailed planning and finalize engineering, economic and environmental studies. The funds requested for Fiscal Year 1987 will be used to finalize the feasibility report, complete the Environmental Impact Statement, conduct a public meeting and accomplish an interagency review. The study report of the Division Engineer is scheduled for completion in March 1987.

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Texas (Continued)					
San Jacinto River and Tributaries	3,330,000	2,557,000	350,000	250,000	173,000

The San Jacinto River basin extends generally northwest from Galveston Bay, a distance of about 87 miles, and encompasses a total area of 3,976 square miles. The basin includes 1,034 square miles drained by Buffalo Bayou and Tributaries, the subject of a separate study authorization. Streams with flooding and drainage problems include Cypress, Little Cypress, Spring, Lake, Caney, and Peach Creeks, and the East and West Forks of the San Jacinto River. Cypress Creek, a tributary of the San Jacinto River with a watershed of 320 square miles, has experienced flooding practically every year in recent times and therefore, study efforts have been concentrated on the flooding problems along Cypress Creek. An interim report on Cypress Creek was completed in April 1985. Reconnaissance studies of Little Cypress, Spring, Lake, Caney, and Peach Creeks, and the East and West Forks of the San Jacinto River are in progress. Flood control storage requirements and flood control benefits for potential water supply reservoirs on Lake Creek and the East Fork of the San Jacinto River are being developed and will be made available to the Bureau of Reclamation. The total study cost estimate has been increased $40,000 for price levels. Fiscal Year 1986 funds are being used to complete reconnaissance level studies on Spring, Lake, Caney and Peach Creeks, and East and West Forks of the San Jacinto River. The funds requested for Fiscal Year 1987 will be used for feasibility studies of alternatives identified during the reconnaissance phase of the study. The study report of the Division Engineer is scheduled for completion in September 1989.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
SUBTOTAL FLOOD DAMAGE PREVENTION STUDIES	52,943,000	35,376,000	4,283,000	4,767,000	9,517,000

c. Shoreline Protection Studies: None

d. Special Studies: None.

e. Comprehensive Studies: The amount of $1,800,000 is requested in Fiscal Year 1987 for continuation of three studies.

Arkansas

Red River Basin, Arkansas, Texas Louisiana, and Oklahoma Comprehensive Study	3,100,000	825,000	350,000	800,000	1,125,000

The Red River Basin Comprehensive Study (authorized by Public Law 98-63, July 30, 1983) will address the development and efficient utilization of the water and related resources along the Red River and its tributaries in Arkansas, Texas, Louisiana and Oklahoma. The study area includes the main stem of the Red River and the Little River, Kiamichi and Boggy River systems. The study will consider measures for control of floods; development of water supply treatment and conveyance facilities; irrigation; hydroelectric power; recreation; and navigation. The lack of adequate water treatment and distribution systems requires many communities to ration water in drought periods. The demand for electric power in the area is expected to increase in the future. The Federal Energy Regulatory Commission anticipates a deficiency of approximately 38,500 megawatts by the year 2000. While natural resources including timber, land, and water are abundant in the study area, economic growth lags that of the state and the nation. The total study cost estimate increased $500,000, of which $400,000 is due to broadening the scope of the study to provide for studies of multipurpose project(s) in the East Cache Creek watershed; $30,000 is due to reassessment of study needs for the remainder of the Red River; and $70,000 is for price levels. Fiscal Year 1985 funds were used to initiate the feasibility phase at full Federal expense pursuant to language contained in House Report 98-755. Fiscal Year 1986 funds are being used for feasibility studies, which will continue with funds requested for Fiscal Year 1987. The reconnaissance phase was completed in March 1985. The feasibility study is scheduled for completion in March 1989.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Arkansas (Continued)					
White River Basin, Arkansas & Missouri - Authorization Report	1,155,000	400,000	250,000 1/	400,000	105,000

1/ Reflects $60,000 transfer to the study

The White River Basin comprises about 27,765 square miles of which 10,622 are in the southern part of Missouri, and the remaining 17,143 are in the northern and eastern parts of Arkansas. Its population was about 1,600,000 in 1980 and is expected to grow to about 2,400,000 by the year 2020. The main economic activities are agriculture and light manufacturing. The economy is expected to expand faster than that for the nation as the basin becomes less dependent on agriculture. Water and related land resource needs are great and are expected to increase rapidly with the expanding economy. The devastating floods which occurred in December 1982 demonstrated the need and urgency for flood control improvements throughout the basin. Another primary need is the development of hydroelectric power from the basin's water resources to help sustain the continued growth of the area's economy. Potential solutions that may be considered are outlined in the 10 - 15 year plan of the White River Basin Comprehensive Study completed in June 1968. This plan will be reviewed, updated, and modified to address current conditions and needs in the basin. The total study cost estimate has increased $460,000 due to increases of $30,000 for price levels; $60,000 to complete and document reconnaissance studies; and $370,000 due to an increase in the scope of the feasibility phase.

Fiscal Year 1986 funds are being used to complete the reconnaissance phase and to initiate the feasibility phase at Federal expense upon agreement by the local sponsor to share 50 percent of the costs of the feasibility phase after cost sharing is implemented. The effective date of implementation is 15 March 1986. The funds requested for Fiscal Year 1987 will be used to continue the Federal share of the feasibility phase of the study. The estimated cost of the feasibility phase is $1,190,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$1,850,000
Reconnaissance Phase (Federal)	460,000
Feasibility Phase (Federal)	695,000
Feasibility Phase (Non-Federal)	695,000

The reconnaissance phase was completed in January 1986. The feasibility study is scheduled for completion in September 1988.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Oklahoma					
Arkansas River and Tributaries, South Central and Southeast Areas of Oklahoma Comprehensive Study	2,000,000	400,000	450,000	600,000	550,000

The South Central and Southeast Oklahoma Comprehensive Study (authorized by Public Law 98-63, July 30, 1983) area consists of the Poteau River from its confluence with the Arkansas River to Wister Lake, Oklahoma; the Fourche Maline from Wister Lake to the Wilburton, Oklahoma, vicinity; Gaines Creek from its headwaters to Eufaula Lake; Dirty Creek from its confluence with the Arkansas River to Eufaula Lake; and the Deep Fork River from Eufaula Lake to the vicinity of Arcadia, Oklahoma, and all tributaries thereto. The area encompasses communities that now ration water in dry years. Future water shortages are expected to become more critical. Flooding continues to be a significant problem in the area. In October 1983, an estimated $2,000,000 in flood damages occurred in the Deep Fork River Basin from that single event. The Federal Energy Regulatory Commission has projected a deficiency of about 38,500 megawatts by year 2000 in the area in which a portion could potentially be met by hydroelectric power development. An overall multiple-purpose analysis of water resource problems and possible solutions is necessary to ensure the optimum development of the study area's potential. The study will consider measures for control of floods, development of water supply, irrigation, hydroelectric power, recreation, and navigation. The area includes Haskell, Latimer, Leflore, Lincoln, Okfuskee and Pittsburg Counties. The total study cost estimate has increased $50,000 for price levels. Fiscal Year 1985 funds were used to initiate the feasibility phase at full Federal expense pursuant to language contained in House Report 98-755. Fiscal Year 1986 funds are being used for feasibility studies, which will continue with funds requested for Fiscal Year 1987. The reconnaissance phase was completed in March 1985. The feasibility study is scheduled for completion in December 1988.

SUBTOTAL COMPREHENSIVE STUDIES	6,255,000	1,625,000	1,050,000	1,800,000	1,780,000

f. Project Review Studies: The amount of $329,000 is requested in Fiscal Year 1987 for the completion of two studies and continuation of one study.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Kansas					
Winfield	570,000	320,000	200,000	50,000	0

The proposed project authorized by the Flood Control Act of 1965, is located on Walnut River and Timber Creek at Winfield in South Central Kansas. The Walnut River has a drainage area of 1,840 square miles. The project was authorized along with Towanda Lake, El Dorado Lake and Douglass Lake. Construction of the El Dorado Lake project will be completed in Fiscal Year 1986 and studies have shown that the upstream Towanda Lake project probably will not be built thus increasing flood damage projections at Winfield. At the request of local interests the Corps reactivated planning studies for the Winfield project. The 1980 census showed Winfield to have a population of 10,700. The major problem is that the present levee system does not provide adequate urban flood protection. About half of the city lies within the standard project flood plain. The existing levee would be circumvented by floods larger than the 40-year event, and would be overtopped by floods larger than the 50-year event. A restudy was conducted to reformulate the project to meet current needs of the region. The Review of Authorized Deferred Project Report, completed September 1984, concluded that an economically feasible project can be constructed. Those studies considered El Dorado Lake in place and also evaluated flood control benefits with and without the construction of Douglass Lake. The study cost estimate has increased $10,000 for price levels. Fiscal Year 1986 funds are being used to complete the General Revaluation Report. The funds requested for Fiscal Year 1987 will be used to coordinate the review with higher authority. This restudy is scheduled for completion in June 1987.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Oklahoma					
Hugo Lake	740,000	411,000	100,000	229,000	0

Hugo Lake is the key downstream unit in a proposed three-lake system in the Kiamichi River Basin in Southeastern Oklahoma. Hugo Lake and Sardis Lake are completed and Tuskahoma Lake is authorized. Hugo Lake was constructed for flood control, water supply, water quality control, recreation and fish and wildlife. The reconnaissance study determined that hydropower development of Hugo Lake is potentially feasible and the reconnaissance report was approved in December 1982. Detailed investigations to determine the technical, economic and environmental feasibilities are now underway. The scope of study has been expanded to determine the sensitivity of hydropower generation at Hugo Lake to the potential development of hydropower facilities at Sardis and Tuskahoma Lakes. The study cost estimate has decreased $240,000 due to an increase of $15,000 for price levels, offset by a decrease of $255,000 due to reassessment of remaining study needs. Fiscal Year 1986 funds are being used to complete plan formulation and system optimization studies, and to initiate the draft feasibility report. The funds requested for Fiscal Year 1987 will be used to complete the study. The restudy is scheduled for completion in September 1987.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
New Mexico					
Las Cruces	125,000	0	50,000	50,000	25,000

The Las Cruces project was authorized by the 1962 Flood Control Act. The project consists of the Las Cruces Dam extending across Alameda and Las Cruces Arroyos and an outlet channel extending to the Rio Grande. The dam and the outlet channel were completed in 1973 and 1978 respectively. Operation and maintenance of the dam is a local responsibility. The earthfill dam is located approximately 1,000 feet east of the city limits. The dam has a height of 67 feet above the stream bed and controls a drainage area of 28.9 square miles. The outlet structure of the dam is 4.7 miles long and has a bottom width varying from eight to twenty feet. When the outlet channel is flowing full, the water surface is 2-3 feet above the surrounding land. Due to expanding urbanization along the outlet channel, any channel failure, particularly without the ability to control releases from the dam, could cause serious flooding.

Fiscal Year 1986 funds will be used to fully fund the reconnaissance phase at full Federal expense. The funds requested for Fiscal year 1987 will be used to initiate the feasibility phase of the study. Studies will evaluate the project in view of urbanization since 1973, and examine the possibility of improving the flood control operation by providing the control outlet works. The preliminary estimated cost of the feasibility phase is $150,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$200,000
Reconnaissance Phase (Federal)	50,000
Feasibility Phase (Federal)	75,000
Feasibility Phase (Non-Federal)	75,000

The reconnaissance phase is scheduled to be completed in November 1986. The feasibility study is scheduled for completion in June 1988.

SUBTOTAL PROJECT REVIEW STUDIES	1,435,000	731,000	350,000	329,000	25,000
TOTAL SURVEYS - CONTINUING	63,946,000	63,303,000	5,773,000	7,046,000	10,982,000

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

3. SURVEYS - CONTINUATION OF PLANNING AND ENGINEERING STUDIES

a. Navigation Studies: The amount of $1,100,000 is requested in Fiscal Year 1987 for continuation of two studies.

Texas

Brazos Island Harbor (42-Foot Project)	1,170,000	0 1/	0	300,000	870,000

1/ Studies prior to Fiscal Year 1986 funded under Brazos Island Harbor survey study.

The existing channel has a depth of 36 feet. Many bulk grain vessels calling on the Port of Brownsville have drafts greater than 32 feet, the current safe operating draft for the waterway. These vessels are required to either light-load or move with caution at high tide. With a deeper channel, larger, more efficient grain ships could be used and a savings in the cost of transporting the grain would be achieved. Additionally, a large portion of Lower Rio Grande Valley grain, presently exported through other ports, would be redirected to Brownsville for export, resulting in a substantial savings in overland transportation cost. Large ships cannot be turned safely in the existing Brownsville turning basin. Accordingly, enlargement of the turning basin is needed to accommodate the larger vessels projected to use the improved waterway. Because of the location of the loading and unloading facilities, these ships can be accommodated by the existing depth of the basin. The proposed plan of improvement provides for enlargement of the entrance channel from deep water in the Gulf of Mexico to the Laguna Madre to a depth of 44 feet and a width of 400 feet; enlargement of the Turning Basin Extension to a point 800 feet beyond the grain elevator to a depth of 42 feet at widths varying from 325 to 400 feet; removal of Brownsville Navigation District Wharves 5, 6, and 9 to permit widening of the adjacent portion of the Turning Basin to 1,200 feet at a depth of 36 feet; construction of asphalt walkways with handrails on the crown of the North and South Jetties; and construction of park-type public use facilities at the inner end of the North Jetty. The first cost of the proposed project, based on October 1985 price levels, is estimated at $31,843,000. Consistent with the cost sharing and financial concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and material disposal areas, presently estimated at $311,000; provide levees and spillways for disposal areas, presently estimated at $782,000; modify or relocate utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $353,000; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $254,000; and, during construction, pay 25 percent of the costs allocated to deep-draft navigation, presently estimated at $7,461,000 and pay an additional 10 percent of the costs allocated to deep-draft navigation within a period of 30 years following completion if not offset by credit allowed by the Secretary of the Army. The average annual benefits are estimated at $5,368,000 ($5,278,000

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

Texas (Continued)

Brazos Island Harbor (42-Foot Project) (Continued)

for navigation and $90,000 for recreation). Based on 8 5/8 percent interest rate and on the project functioning independently, the average annual charges are estimated at $3,548,000 and the benefit-to-cost ratio is 1.5. A Continuation of Planning and Engineering cost estimate has not previously been submitted to Congress. The funds requested for Fiscal Year 1987 will be used to initiate Continuation of Planning and Engineering studies. The Continuation of Planning and Engineering effort is scheduled for completion in March 1990.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Texas (Continued)					
Texas City Channel (50-Foot Project)	1,570,000	0 1/	300,000	800,000	470,000

1/ Studies prior to Fiscal Year 1986 funded under Galveston Bay Area Navigation Study.

Existing waterborne commerce of the Port of Texas City consists almost entirely of crude petroleum and petroleum products. Since 1970, the importation of crude petroleum has risen dramatically resulting in the use of larger more efficient vessels of up to 150,000 dead-weight tons. These vessels have fully-loaded drafts of 50 to 60 feet and can only use the present 40-foot Texas City Channel if substantially light-loaded. Restrictions imposed on the waterways do not allow passing of deep-draft vessels and limit passage by tankers of 120,000 dead-weight tons or greater to daylight hours only and fair weather conditions. Numerous delays in traffic occur now, and delays are projected to increase substantially in the future. The proposed plan of improvement provides for deepening the Texas City Turning Basin to 50 feet; enlarging the 6.7 mile-long Texas City Channel to 50 feet by 600 feet; deepening the existing 800-foot-wide Bolivar Roads Channel and Inner Bar Channel to 50 feet; deepening the existing 800-foot-wide Bolivar Roads Channel and Inner Bar Channel to 50 feet; deepening the existing 800-foot wide Outer Bar and Galveston Entrance Channels to 52 feet; extending the Galveston Entrance Channel at a 52-foot depth for 4.1 miles at a width of 800 feet and an additional 8.3 miles at a width of 600 feet; and the construction of an offshore emergency turning point. The plan also includes the establishment of 600 acres of wetland and development of water-oriented recreational facilities on a 90-acre enlargement of the Texas City Dike. The first cost of the proposed project, based on October 1985 price levels, is estimated at $179,109,000. Consistent with the cost sharing and financial concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide levees for disposal areas and wetlands, presently estimated at $9,085,000; relocate utilities, roads, and other facilities, except railroad bridges, presently estimated at $361,000; provide berthing areas presently estimated at $525,000; pay one-half of the separable and joint costs allocated to recreation presently estimated at $3,138,000; and, during construction, pay 25 percent of the costs allocated to deep-draft navigation to a depth of 45 feet plus 50 percent of the costs allocated to deep-draft navigation deeper than 45 feet, presently estimated at $58,224,000 and pay an additional 10 percent of the costs allocated to deep-draft navigation within a period of 30 years following completion if not offset by credit allowed by the Secretary of the Army. The average annual benefits are estimated at $71,458,000 ($70,505,000 for navigation and $953,000 for recreation). Based on an 8 5/8 percent interest rate on the project functioning independently, the average annual charges are estimated at $21,036,000 and the benefit-cost ratio is 3.4. A Continuation of Planning and Engineering cost estimate has not been previously submitted to Congress. Fiscal Year 1986 funds will be used to initiate studies to reaffirm project feasibility, reassess the current economic and projected conditions, validate environmental impacts, and to assure that the project is in compliance with laws

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Texas (Continued)					
Texas City Channel (50-Foot Project) (Continued)					
and regulations that have been implemented since the study was completed. Funds requested for Fiscal Year 1987 will be used to complete reaffirmation studies and initiate design studies. The Continuation of Planning and Engineering effort is scheduled for completion in September 1988.					
SUBTOTAL NAVIGATION	2,740,000	0	300,000	1,100,000	1,340,000

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	↓	↓	↓	↓	↓

b. Flood Damage Prevention Studies: The amount of $2,463,000 is requested in Fiscal Year 1987 for completion of one study and continuation of four studies.

Arkansas					
North Little Rock (Dark Hollow)	540,000	125,000 1/	40,000 2/	75,000	300,000

1/ Studies prior to Fiscal Year 1984 funded under North Little Rock, Arkansas (Dark Hollow) survey study.
2/ Reflects $40,000 transfer to the study.

The Dark Hollow area is located entirely within the city limits of North Little Rock, Arkansas. The area is comprised of approximately 2,000 acres of residential, commercial, industrial, and agricultural activities. The residential areas contain about 600 units which are occupied primarily by lower income families. About two-thirds of the homes are owner occupied. The major flood problem results from lack of an adequate outlet facility for removal of rapid runoff from higher elevations of the basin. The existing outlet facility, the Redwood Tunnel, has the capacity for carrying runoff from storms up to a 5-year frequency. Minor flooding occurs annually. In addition, the Redwood Tunnel, which was constructed in the early 1900's, is in poor condition, and the city of North Little Rock fears that failure of the tunnel will occur in the near future with catastrophic flood damages resulting. The tunnel has experienced several cave-ins in recent years, including the spring of 1985, and recent engineering examinations indicate that the tunnel is severly deteriorated. The primary feature of all plans being investigated is the construction of a new outlet to replace the Redwood Tunnel. The project recommended in the Survey Report included the alternation of existing bridges and construction of a new channel outlet to replace the existing Redwood Tunnel. The first cost of the proposed project, based on October 1985 price levels, is estimated at $27,300,000. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, presently estimated at $750,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $1,650,000; pay one-half of the costs allocated to recreation, presently estimated at $185,000, and bear all costs of operation, maintenance, and replacement of recreation facilities, presently estimated at 5,000 annually; and pay 16 percent of the costs allocated to flood control, presently estimated at $4,332,000, and bear all costs of operation, maintenance, and replacement of flood control facilities presently estimated at $42,000 annually. The Continuation of Planning and Engineering cost estimate is the initial estimate. Average annual benefits are $2,676,000 of which $2,598,000 is for flood damage reduction and $78,000 is for recreation. The benefit-to-cost ratio is 1.03 to 1 at 8 5/8 percent. The Formulation Report will be completed in Fiscal Year 1986. The funds requested for Fiscal Year 1987 will be used to initiate the General Design Memorandum studies. The Continuation of Planning and Engineering effort is scheduled for completion in September 1988.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
New Mexico					
Middle Rio Grande Flood Protection, Bernalillo to Belen	2,460,000	1,060,000 1/	450,000	475,000	475,000

1/ Studies prior to Fiscal Year 1984 funded under Rio Grande and Tributaries, New Mexico and Colorado study.

The project, which is an interim of the Rio Grande and Tributaries Study, is located on the Middle Rio Grande between the cities of Bernalillo and Belen, New Mexico. A major flood threat is present to 110 square miles of flood plain contiguous to the Rio Grande between Bernalillo and Belen. Approximately 41,000 residents and $811,000,000 worth of property are located in the flood plain which is subject to flooding from an 1,100 square mile uncontrolled drainage area. The plan of improvement consists of raising and rehabilitating 62.3 miles of levees in the vicinities of Corrales, Mountainview, Isleta Indian Pueblo, Los Lunas, and Belen, New Mexico, preserving two existing wetlands within the referenced reach, and purchasing 200 acres of fish and wildlife lands. The first cost of the proposed project, based on October 1985 price levels, is estimated at $44,900,000. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, presently estimated at $1,255,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $1,035,000; pay 25 percent of the costs allocated to fish and wildlife mitigation, presently estimated at $528,000, and bear all costs of operation, maintenance, and replacement of fish and wildlife facilities presently estimated at $43,000 annually; and pay 19 percent of the costs allocated to flood control, presently estimated at $8,407,000, and bear all costs of operation, maintenance, and replacement of flood control facilities presently estimated at $105,000 annually. Average annual benefits are $5,167,000, of which $4,853,000 are for flood damage reductions and $313,000 for area redevelopment. The benefit to cost ratio is 1.3 to 1 at 8 5/8 percent. The interim report of the Chief of Engineers was transmitted to the Assistant Secretary of the Army, on 23 June 1981. The Continuation of Planning and Engineering cost estimate has increased $160,000 due to increases of $43,000 for price levels and $117,000 for reassessment of remaining study needs. Fiscal Year 1986 funds are being used to complete the General Design Memorandum and initiate work on the Feature Design Memorandum. The funds requested for Fiscal Year 1987 will be used to continue work on the Feature Design Memorandum. The Continuation of Planning and Engineering effort is scheduled for completion in September 1989.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	
Oklahoma					
Mingo Creek	1,860,000	537,000 1/	900,000	423,000	0

1/ Prior studies funded under Verdigris River, Kansas and Oklahoma Study

Mingo Creek is a tributary of Bird Creek and is part of the Verdigris River basin. Mingo flows from south to north through the eastern part of Tulsa, Oklahoma. Approximately 90 percent of Mingo's 61 square mile drainage area lies within the City of Tulsa. The project will consist of 23 detention ponds which would capture peak flows and hold them temporarily until downstream flows subside. There would be about 7.5 miles of channelization in selected spots on the tributaries and mainstem of Mingo Creek. On the average, Mingo Creek floods about once every two-three years. Since 1959, ten major floods have been recorded. Mingo Creek peaks quickly with little warning time to residents of approximately 3,100 homes in the flood plain. These floods rise rapidly, within 30 minutes of a heavy rain, and recede quickly, after only one to six hours. A 100-year flood (with full watershed urbanization) could rise four to eight feet in depth over the streambanks with a velocity of more than five feet per second. Such floods present great hazards to life and property. The flood of record occurred 26-27 May 1984 which caused an estimated $124,000,000 ($125,000,000 October 1985 prices) damages in the Mingo Creek flood plain and resulted in 14 fatalities in the Tulsa area with five attributable to flooding from Mingo Creek. The recommended plan would provide a minimum of 65 years flood protection providing average annual benefits of about $30,360,000 (October 1985 prices), and a benefit-to-cost ratio of about 2.5 to 1 at 8 5/8 percent. The first cost of the proposed project, based on October 1985 price levels, is estimated at $121,000,000. Consistent with the cost sharing and financing concepts agreed to by the Adminstration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, presently estimated at $25,975,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $13,577,000; provide associated engineering and design and supervision and administration, presently estimated at $1,948,000; and pay 5 percent of the total project costs, presently estimated at $6,050,000, and bear all costs of operation, maintenance, and replacement of flood control facilities presently estimated at $208,000 annually. The interim survey report for Mingo Creek was approved by the Board of Engineers for Rivers and Harbors, February 1981, and was forwarded to Congress in April 1984. The Continuation of Planning and Engineering cost estimate has increased $60,000 for price levels. Fiscal Year 1986 funds are being used to continue detailed design efforts. The funds requested for Fiscal Year 1987 will be used to complete detailed design efforts. The Continuation of Planning and Engineering effort is scheduled for completion in May 1987.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Texas					
Sims Bayou at Houston, Texas	2,070,000	0 1/	400,000	745,000	925,000

1/ Studies prior to Fiscal Year 1985 funded under Buffalo Bayou study.

The urbanized watershed of Sims Bayou is located in the southern part of Houston, Texas, and provides drainage for 94 square miles of the Buffalo Bayou basin. The area lies almost entirely within the corporate limits of Houston, South Houston and Missouri City. The plan of improvement provides for enlargement and rectification, with appropriate erosion control measures, of 19.31 miles of Sims Bayou to provide flood protection; environmental measures and riparian habitat improvement along the entire alignment; and recreational development consisting of hike and bike trails connecting existing public parks, as well as picnic, and other day-use facilities. The project will eliminate stream flooding from 14,800 acres of urban lands and beneficially affect nearly 23,000 structures, mostly residential. The 100-year flood plain would be reduced to 2,300 acres outside required rights-of-way. The recreational development plan will partially satisfy existing demand in the area. The first cost of the proposed project, based on October 1985 price levels, is estimated at $126,237,000. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, and rights-of-way, presently estimated at $11,514,000; modify, or relocate buildings, pipelines, utilities, roads, and other facilities, except railroad bridges, presently estimated at $4,536,000; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $2,187,000; and, during construction, pay 12 percent of the costs allocated to flood control, presently estimated at $14,416,000. The average annual benefits attributable to the recommended project are estimated at $118,973,000 ($117,803,000 for urban flood damage prevention and $1,170,000 for recreation). Based on an 8 5/8 percent interest rate and on the project functioning independently, the average annual project charges are estimated at $13,061,000, including $457,000 for operation and maintenance, and the benefit-cost-ratio is 9.1. The Continuation of Planning and Enginering cost estimate has been increased $90,000 for price levels. Fiscal Year 1985 funds will be used to initiate planning and engineering studies. Funds requested for FY 1987 will be use to complete re-evaluation studies and begin design work. The Continuation of Planning and Engineering effort is scheduled for completion in March 1989.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Texas (Continued)					
Upper White Oak Bayou and Tributaries - Vicinity of Houston	3,700,000	1,649,000 1/	655,000	745,000	651,000

1/ Studies prior to Fiscal Year 1982 funded under Buffalo Bayou Study.

White Oak Bayou is a major tributary of Buffalo Bayou and drains a rapidly developing area in northwest Houston, Texas. A flood control project, consisting primarily of concrete-lined channel improvements in the lower 10.7 miles of the bayou, was completed by the Corps of Engineers in 1976. The flooding problems of the watershed expanded beyond the existing improvements as the 61-square-mile drainage area of upper White Oak Bayou experienced extensive urban development, particularly residential development. More than 4,500 single-family residences are located in flood prone areas adjacent to the streams in the upper basin, and many sustained flood damages in May 1968, February 1969, October 1970 and March 1972. The 1970 flood caused damages estimated at $1,100,000 and the 1972 flood damages were estimated at $2,650,000. Based on October 1985 price levels, the 1970 and 1972 flood damages are estimated at $3,309,000 and $6,787,000, respectively. Because of the increasing flooding problems, an interim report on Upper White Oak Bayou was prepared and submitted to the Congress in August 1979. This report, published as House Document No. 96-182, recommends a flood control project consisting of channel improvements in White Oak Bayou from mile 10.7 to mile 19.9, on Cole Creek from its mouth to mile 4.9, and on Vogel Creek from its mouth to mile 4.5. In addition, regulation of the residual 100-year flood plains along these streams and recreational development on project lands along White Oak Bayou, between mile 14.6 and 18.3, were also proposed in the report. The local sponsor is very active in flood control work in Harris County and is proceeding with plans of their own for work within the Upper White Oak Bayou Watershed. The local work will decrease the scope required of the Federal project. The first cost of the proposed project, as recommended in the survey report, based on October 1985 price levels, is estimated at $92,124,000. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, and rights-of-way, presently estimated at $6,621,000 (including $45,000 for recreation); modify, or relocate buildings, pipelines, utilities, roads, and other facilities, except railroad bridges, presently estimated at $3,742,000; make a cash contribution, presently estimated at $661,000, which when combined with lands required for recreation equals to one-half of the separable and joint costs allocated to recreation; and, during construction, pay 14 percent of the costs allocated to flood control, presently estimated at $12,360,000. The average annual benefits are estimated at $13,035,000 ($10,267,000 for flood damage reduction; $1,939,000 for land enhancement; $581,000 for reduction in public health, relief, and scare costs; and $248,000 for recreation). Based on an 8 5/8 percent interest rate and on the project functioning independently, the average annual charges are estimated at $9,149,000 and the benefit-cost ratio is 1.4.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Texas (Continued)					
Upper White Oak Bayou and Tributaries - Vicinity of Houston (Continued)					
The Continuation of Planning and Engineering cost estimate has decreased $10,000. The change results from a price level increase of $90,000, a decrease of $55,000 based on the cost to evaluate impacts of proposed improvements on lower 10.7 miles of existing flood control channel and a decrease of $45,000 for archeological studies. Fiscal Year 1986 funds are being used to conduct cultural resources and detailed design studies. The funds requested for Fiscal Year 1987 are scheduled to be used to continue detailed design studies. The Continuation of Planning and Engineering effort is scheduled for completion in June 1988.					
SUBTOTAL FLOOD DAMAGE PREVENTION STUDIES	10,630,000	3,371,000	2,445,000	2,351,000	2,326,000
c. Shoreline Protection Studies: None.					
d. Special Studies: None.					
e. Comprehensive Studies: None.					
f. Project Review Studies: None.					
TOTAL SURVEYS - CONTINUATION OF PLANNING AND ENGINEERING STUDIES	13,370,000	3,371,000	655,000	651,000	3,666,000
4. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - NEW					
a. Navigation: None.					
b. Flood Damage Prevention: None.					
c. Shoreline Protection: None.					
d. Multiple Purpose Power: None.					

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

5. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - CONTINUING

a. Navigation: None

b. Flood Damage Prevention Studies: The amount of $735,000 is requested in Fiscal Year 1987 for continuation of Phase I project.

Colorado

Arkansas River and Tributaries above John Martin Dam	5,315,000	2,980,000	450,000	735,000	1,150,000

The project was authorized for Phase I Planning in Section 1(a) of the Water Resources Development Act of 1974 in accordance with the report of the Chief of Engineers dated 13 September 1982 at an estimated total cost of $47,091,000. The first cost of the proposed project, based on October 1985 price levels, is estimated at $125,500,000. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, presently estimated at $5,005,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $20,110,000; purchase water and provide for on-farm drainage structures, presently estimated at $5,100,000; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $660,000, and bear all costs of operation, maintenance, and replacement of recreation facilities, presently estimated at $14,000 annually; pay 25 percent of separable and joint costs allocated to fish and wildlife enhancement, presently estimated at $486,000, and bear all costs of operation, maintenance, and replacement of fish and wildlife facilities presently estimated at $41,000 annually; and pay five percent of the costs allocated to flood control, presently estimated at $6,210,000, and bear all costs of operation, maintenance, and replacement of flood control facilities presently estimated at $486,000 annually. The feasibility report was printed in House Document No. 93-143, dated 5 September 1973. The authorized project for flood control and recreation consists of eight subprojects located along the Arkansas River and its tributaries above John Martin Dam, Colorado. These projects are Florence, La Junta (Anderson and King Arroyos), Portland, Pueblo, Main Stem, La Junta (Reach 2 Urban), Brewster to Florence, and Fountain Creek. Needs and conditions of the study area have changed sufficiently to warrant reformulation to the total plan for the Arkansas River above John Martin Dam. The

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Colorado (Continued)					
Arkansas River and Tributaries above John Martin Dam (Continued)					
project plan for Fountain Creek has been reformulated, and further studies for Florence, Brewster to Florence and La Junta (Anderson and King Arroyos) have been terminated because economically viable project plans cannot be identified. The Portland and Pueblo (Dry Creek) studies were deleted due to changed conditions in the study areas since authorization. Work on the La Junta (Reach 2 Urban) interim was curtailed in Fiscal Year 1985 due to the failure of the local sponsor to support the recommended project. The cost of Phase I studies has increased $115,000 due to increases of $80,000 for price levels and $35,000 for additional study needs on the La Junta interim. An interim report was submitted in June 1980 for Fountain Creek and the report was transmitted to Congress on 7 March 1984. Fiscal Year 1986 funds are being used to continue the Phase I General Design Memorandum for study efforts on the Main Stem. The funds requested for Fiscal Year 1987 will be used to continue the Main Stem study which is scheduled for completion in June 1989. The overall Phase I study is scheduled for completion in June 1989.					
SUBTOTAL - FLOOD DAMAGE PREVENTION STUDIES	5,315,000	2,980,000	450,000	735,000	1,150,000
c. Shoreline Protection: None.					
d. Multiple Purpose Power: None.					
TOTAL PHASE I STAGE OF ADVANCE ENGINEERING - CONTINUING	5,315,000	2,980,000	450,000	735,000	1,150,000

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
6. PHASE I STATE OF ADVANCE ENGINEERING AND DESIGN - CONTINUATION OF PLANNING AND ENGINEERING STUDIES.					
a. Navigation: None.					
b. Flood Damage Prevention: None					
c. Shoreline Protection: None.					
d. Multiple Purpose Power: None.					
GRAND TOTAL - SURVEYS AND PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN	82,113,000	45,753,000	9,968,000	11,569,000	15,823,000

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APPROPRIATION TITLE: General Investigations - Advance Engineering and Design - Local Protection (Flood Control)

PROJECT: Alamogordo, New Mexico (Continuation of Planning)

LOCATION AND DESCRIPTION: The project is located in Otero County, in South-Central New Mexico. The City of Alamogordo is situated at the foot of the Sacramento Mountains near the eastern edge of the Tularosa (closed) basin. The authorized plan of improvement consisted of a diversion channel about 7.0 miles long aligned generally in a north-south direction east of the city limits of Alamogordo. The diversion channel would provide flood protection from the numerous arroyos which head on the western slopes of the Sacramento Mountain's and flow through the city causing extensive damage. This channel will carry flows northward to Dillard Draw thence westward to an area of "alkali flats" to be dissipated by evaporation and percolation. Reformulation of the originally recommended plan will be necessary due to urban development on the original project alignment.

AUTHORIZATION: Flood Control Act of 1962.

BENEFIT-TO-COST RATIO: The benefit-to-cost ratio at the time of authorization was 1.2 to 1. The current benefit-to-cost ratio is 4.3 to 1 at 8-5/8%.

SUMMARIZED FINANCIAL DATA

Estimated Federal Cost	$10,200,000	Preconstruction Planning Estimate	$1,270,000
Estimated Non-Federal Cost	3,400,000	Allocations to 30 September 1985	189,000
Cash Contribution $1,200,000		Conference Allowance for FY 1986	450,000
Other 2,200,000		Allocation for FY 1986	450,000
Total Estimated Project Cost	$13,600,000	Planning Allocation for FY 1987	330,000
		Balance to complete Preconstruction Planning after 1987	301,000

JUSTIFICATION: Records indicate that from 1935 through 1959, 11 floods exceeded the capacity of railroad drainage structures in the area, overtopping the tracks by as much as two feet. Floods of 17 and 26 August 1959 caused estimated damages of $240,000 and $57,000, respectively. At October 1985 price levels the damages would be $1,275,000 for the 17 August flood and $302,000 for the 26 August flood. Other minor floods have occurred as recently as 1979 and 1984. Preliminary economic analysis has determined average annual damages to be approximately $5.6 million. The average annual benefits are estimated to be $5,590,000, all flood control.

DIVISION: Southwestern DISTRICT: Albuquerque REGION: Rio Grande

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Alamogordo, New Mexico

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NON-FEDERAL COSTS: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests will be required to provide all lands, easements and rights-of-way, presently estimated at $1,275,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $925,000; make a cash contribution to increase their share to 25 percent of total construction costs for flood control, presently estimated at $1,200,000; and bear all costs of operation, maintenance, and replacement of flood control facilities presently estimated at $25,800 annually.

STATUS OF LOCAL COOPERATION: The City of Alamogordo adopted a resolution on 10 October 1978 assuring local cooperation. A formal assurance of intent was provided on 2 April 1982. On 27 July 1982, the City Council passed a resolution expressing their continued support of the project and indicating their willingness to financially participate in construction of the project. The City provided a letter to this effect on 28 July 1982. On 13 August 1985 the City Council agreed to financially participate in project construction at a level consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate majority leadership. A letter of intent was provided on 2 October 1985.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $10,200,000 is an increase of $6,620,000 from the last estimate ($3,580,000) submitted to Congress (Fiscal Year 1974). This increase is due to higher price levels.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The draft Environmental Impact Statement is scheduled to be filed with the Environmental Protection Agency 15 October 1987. The final Environmental Impact Statement is scheduled to be filed in June 1988.

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The provisions of Section 404 of the Clean Water Act will be met with the submission of an Environmental Impact Statement, including a Section 404(b)(1) Evaluation, to Congress in June 1988, and will require a subsequent appropriation action on this project by Congress.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in Fiscal Year 1963. The General Design Memorandum was completed in 1966. Work was discontinued because the city could not give assurances of local cooperation due to the failure of a bond issue in 1974. In February 1979, because of renewed local interest due to recent nearby floods and required flood insurance, the project was reclassified to deferred status. It was determined in the Status Report accomplished under the Restudy of Deferred Project Program that the authorized project has reasonable economic justification, and is supported by a local sponsor. The project was reclassified to active status on 24 September 1982. Due to development that has occurred on the project alignment since 1966, the project as was originally proposed is no longer practical and alternate alignments or solutions will be evaluated. Preconstruction planning is scheduled for completion in December 1988. Funds to resume preconstruction planning were appropriated in Fiscal Year 1986.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

DIVISION: Southwestern
District: Albuquerque

Project: Alamogordo, New Mexico

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	$2,100 (July 64)		$3,580 (Jul 72)		$10,200
Reason for Change		(1,480)		(6,620)	
a. Price Escalation		1,480		6,620	
b. Design Changes		0		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimated Adjustments		0		0	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		0	

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APPROPRIATION TITLE: General Investigations - Advance Engineering and Design - Local Protection (Flood Control)

PROJECT: Rio Grande Floodway, San Acacia to Bosque del Apache Unit, New Mexico (New Start)

LOCATION AND DESCRIPTION: The project area extends from the upper end of the low-flow conveyance channel at the San Acacia diversion works to the lower end of the low-flow conveyance channel at the head of Elephant Butte Reservoir, a distance of about 58 miles. The current plan would comprise the complete removal and replacement of the existing spoil bank levee used to separate the Rio Grande low-flow conveyance channel from the cleared floodway.

AUTHORIZATION: Flood Control Acts of 1948 and 1950.

BENEFIT-TO-COST RATIO: The project is part of the Rio Grande Floodway project which had a benefit-to-cost ratio of 1.2 at the time of initial authorization in 1948. The current benefit-to-cost ratio is 4.0 to 1 at 8 5/8%. The benefit-to-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

Estimated Federal Cost	$24,225,000	Preconstruction Planning Estimate	$1,230,000
Estimated Non-Federal Cost	8,075,000	Allocations to 30 September 1985	0
Cash Contribution $8,075,000		Conference Allowance for FY 1986	0
Other 0		Allocation for FY 1986	0
Total Estimated Project Cost	$32,300,000	Planning Allocation for FY 1987	500,000
		Balance to Complete Preconstruction Planning After 1987	730,000

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JUSTIFICATION: In September, 1929 area storms produced a peak discharge of 60,000 c.f.s. on the Rio Grande at the San Acacia gage. Irrigation and transportation facilities were disrupted and destroyed. Over 90 percent of the irrigated farmlands in a 60-mile reach of the Rio Grande were severely damaged, and the original villages of San Acacia, San Antonio and San Marcial were destroyed. The 58-mile-long Rio Grande low-flow conveyance channel, built by the U.S. Bureau of Reclamation in 1961 at a cost of $74 million, is the primary damageable property in the study area. An occurrence of the Standard Project Flood would result in damages of about $222 million. The U.S. Bureau of Reclamation estimates that, following a flood severe enough to breach the spoil-bank levee separating the low-flow conveyance channel from the adjacent floodway, the low-flow conveyance channel would be obliterated and out of service for at least five years. As much as 455,000 acre-feet of water would be lost over such a five-year period, with an economic value of almost $67 million. Damages to residential properties and transportation facilities, mostly in the Socorro area, would exceed $42 million under existing conditions. Preliminary economic analysis has determined average annual damages to be approximately $15 million. Average annual benefits are estimated to be $13 million, all Flood Control.

DIVISION: Southwestern DISTRICT: Albuquerque REGION: Rio Grande

NON-FEDERAL COSTS: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority leadership, local interests are required to provide without cost to the United States all lands, easements and rights-of-way; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project; pay twenty-five percent of the costs allocated to flood control, presently estimated at $8,075,000, and bear all costs of operation, maintenance, and replacement of flood control facilities presently estimated at $135,600 annually.

STATUS OF LOCAL COOPERATION: The State of New Mexico supports the authorized levee project, as currently modified, to provide needed flood protection to the Middle Rio Grande Valley below San Acacia. This support was stated in the prepared statement submitted to the House Appropriations Committee in support of Fiscal Year 1986 Appropriations and has been reaffirmed by letter dated 22 April 1985 from the New Mexico Interstate Stream Commission. The State of New Mexico has provided a letter of intent, dated 3 October 1985, to financially participate in project construction at a level consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate majority leadership.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $24,225,000 is the initial cost estimate and has not been previously presented to Congress.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The draft Environmental Impact Statement is scheduled to be filed with the Environmental Protection Agency in May 1989. The final Environmental Impact Statement is scheduled to be filed in November 1989.

The provisions of Section 404 of the Clean Water Act will be met with the submission of an Evironmental Impact Statement, including a Section 404(b)(1) Evaluation, to Congress in November 1989 and will require a subsequent appropriation action on this project by Congress.

OTHER INFORMATION: The project was authorized by the Flood Control Act of 1948. Because of local concerns for sediment control as well as flood control the 1960 Flood Control Act authorized a restudy of the area. A resulting survey report recommended construction of dams on the Rio Puerco and Rio Salado in lieu of the authorized levees to provide sediment control as well as flood control. The Water Resources Development Act of 1976 authorized the Phase I stage of AE&D for Rio Puerco/Rio Salado. The authorized project was placed in the inactive category. Completed Phase I studies indicated that the dams were not viable. The project was reclassified to the active category in July 1985. Preconstruction planning is scheduled to be completed in July 1991.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

DIVISION: Southwestern
District: Albuquerque

Project: Rio Grande Floodway, San Acacia to Bosque del Apache Unit, New Mexico

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	24,225 (Oct 85)		Not Applicable		$24,225

Reason for Change

a. Price Escalation
b. Design Changes
c. Additional Function Added Under General Authorization
d. Authorized Modification
e. Post-Contract Award and Other-Estimated Adjustments
f. Schedule Changes
g. Sundry
h. Real Estate

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APPROPRIATION TITLE: General Investigtions - Advance Engineering and Design - Local Protection (Flood Control)

PROJECT: Rio Grande Floodway, Truth or Consequences Unit, New Mexico (Continuation of Planning)

LOCATION AND DESCRIPTION: The project is located at Truth or Consequences, New Mexico, which is about 150 miles south of Albuquerque and immediately downstream of Elephant Butte Dam. The originally proposed plan of improvement consisted of about four miles of levees along the Rio Grande and an interior drainage system. The reformulated plan consists of a detention reservoir on Cuchillo Negro Creek, a tributary of the Rio Grande whose confluence is just upstream of Truth or Consequences.

AUTHORIZATION: Flood Control Acts of 1948 and 1950.

BENEFIT-TO-COST RATIO: The project is part of the Rio Grande Floodway project which had a benefit-to-cost ratio of 1.2 at the time of initial authorization in 1948. The current benefit-to-cost ratio is 1.8 to 1 at 8 5/8 percent for the reformulated plan. The benefit-to-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

Estimated Federal Cost	$ 7,680,000	Preconstruction Planning Estimate	$1,330,000
Estimated Non-Federal Cost	2,720,000	Allocations to 30 September 1985	747,000
Cash Contribution $ 520,000		Conference Allowance for FY 1986	383,000
Other 2,200,000		Allocation for FY 1986	383,000
Total Estimated Project Cost	$10,400,000	Planning Allocation for FY 1987	200,000
		Balance to Complete Preconstruction Planning After FY 1987	0

JUSTIFICATION: The project will provide flood protection from flood flows originating in Cuchillo Negro Creek by means of a dam on Cuchillo Negro Creek. A major flood occurred on 2 September 1972. The area was declared a major disaster area by the President on 22 September 1972. The repair of flood protection structures in the vicinity of Truth or Consequences was estimated at $346,000. This includes $96,000 to repair levees from the Rio Grande upstream on the Cuchillo Negro Creek (a tributary of the Rio Grande with confluence just north of Truth or Consequences), and $250,000 to dredge the Rio Grande back to its pre-flood capacity. The most recent flood occurred in September 1976 and caused an estimated $80,000 damages. Recurrence of these two floods would cause damages of $833,000 and $139,000 (October 1985 prices), respectively. Initially, the project will provide a high degree of protection to a significant portion of the urban areas of Truth or Consequences. In addition to direct protection, evacuation and relief of numerous individuals would be reduced during times of high flows. Average annual benefits are estimated to be $1,838,000, all flood control.

DIVISION: Southwestern

DISTRICT: Albuquerque

REGION: Rio Grande
Rio Grande Floodway, Truth or Consequences Unit, New Mexico

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NON-FEDERAL COSTS: Consistent with the cost sharing and financing concepts agreed to by the Administration and Senate majority leadership, local interests are required to provide all lands, easements and rights-of-way, presently estimated at $1,697,00; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $503,000; pay five percent of the costs allocated to flood control, presently estimated at $520,000, and bear all costs of operation, maintenance, and replacement of flood control facilities presently estimated at $114,000 annually.

STATUS OF LOCAL COOPERATION: Local interests are interested in correcting the Truth or Consequences flooding problem particularly the hazard caused by the Cuchillo Negro Creek just north of the City. The coordination and public involvement activities were initiated with a public meeting in 1979 to announce the study's initiation. In May 1983 a second public meeting was held to inform the locals of the progress of the study and its findings to date. At that meeting approximately 125 citizens (all in attendance) expressed their support for the flood control project. The city of Truth or Consequences and Sierra County have, by letters dated 8 June 1983, expressed their strong support for the project and a willingness to participate in the project construction consistent with the revised cost sharing and financing concepts recommended at that time by the Assistant Secretary of the Army. Local interests continue to display strong support for the project. Formal assurances of local cooperation will be requested prior to the completion of the General Design Memorandum.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $7,680,000 is an increase of $580,000 from the latest estimate ($7,100,000) submitted to Congress. This change includes increases of $200,000 due to price level adjustments, $711,000 for Engineering and Design and $189,000 for Supervision and Administration based upon a reanalysis of requirements; and was partially offset by a decrease of $520,000 based on adjustments between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The draft Environmental Impact Statement is scheduled to be filed with the Environmental Protection Agency in July 1986. The final Environmental Impact Statement is scheduled to be filed in September 1986.

The provisions of Section 404 of the Clean Water Act will be met with the submission of an Environmental Impact Statement, including a Section 404(b)(1) Evaluation, to Congress in September 1986, and will require a subsequent appropriation action on this project by Congress.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in Fiscal Year 1979. The proposed project configuration, at the time of authorization in 1948, consisted of levees along the Rio Grande. Because of urban development since authorization, the original project plan is no longer practical, and floods originating from tributary arroyos are a more serious concern to the city. Therefore, a complete reformulation of the project was required. The reformulated plan consists of a dam on Cuchillo Negro Creek. Preconstruction planning is scheduled to be completed in September 1987.

Rio Grande Floodway
Truth or Consequences Unit, New Mexico

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

DIVISION: Southwestern
District: Albuquerque

Project: Rio Grande Floodway, Truth or Consequences Unit, New Mexico

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	$13,300 (Oct 77)		$7,100 (Oct 84)		$7,680 (Oct 85)
Reason for Change		(-6,200)		(580)	
a. Price Escalation		2,060		200	
b. Design Changes		-8,260		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other-Estimated Adjustments		0		380 1/	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		0	

1/ Includes increases of $711 for Engineering and Design and $189 for Supervision and Administration that was partially offset by a decrease of $520 based on adjustments between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

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APPROPRIATION TITLE: General Investigation - Advance Engineering and Design - Reservoirs (Flood Control)

PROJECT: Douglass Lake, Kansas (Continuation of Planning)

LOCATION AND DESCRIPTION: Located in Butler County, Kansas, on Little Walnut Creek, about six miles northeast of Douglass, Kansas. The plan of improvement consists of a rolled-earth embankment and a controlled spillway. The embankment would be 11,640 feet long, including the spillway, with a maximum height of 89 feet above the streambed. Total storage of the lake would be 171,900 acre-feet, of which 76,400 acre-feet would be for flood control, 77,300 acre-feet for conservation, and 18,200 acre-feet for sediment. The lake would provide a dependable yield of 14.2 million gallons per day. Public-use recreational facilities would include access roads, parking areas, boat ramps, sanitary facilities, picnic units, water supply, and signs and markers.

AUTHORIZATION: Flood Control Act of 1965

BENEFIT-COST RATIO: The benefit-cost ratio last presented to Congress (FY 1986) was 1.01 to 1 at 3 1/4 percent. The current benefit-cost ratio is 1.00 to 1 at 3 1/4 percent. "See Other Information.".

SUMMARIZED FINANCIAL DATA

Estimated Total Appropriation Reqrmt		$84,500,000			
Future Non-Federal Reimbursement		49,075,000			
Estimated Federal Cost (Ultimate)			$33,784,000	Preconstruction Planning Estimate	$3,000,000
Estimated Non-Federal Cost:			50,716,000	Allocations to 30 September 1985	165,000
Cash Contribution		1,641,000		Conference Allowance for FY 1986	250,000
Reimbursement:	Flood Control	9,848,000		Allocation for FY 1986	250,000
	Water Supply	26,930,000		Planning Allocation for FY 1987	265,000
	Recreation	12,222,000		Balance to complete construction Planning after FY 1987	2,320,000
	Other	75,000			
Total Estimated Project Cost			$84,500,000		

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Division: Southwestern

District: Tulsa

Region: Arkansas-White-Red

Douglass Lake, Kansas

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JUSTIFICATION: Douglass Lake is a unit in the plan for the control of floods in the Walnut River Basin. The flood of record and the most recent flood was in June 1979 and caused approximately $14,600,000 damages ($22,270,000 1985 prices). Floods average once every year and have a duration of two days. The properties that would be protected by the project include cropland, pasture, and oil production, with an estimated value of $293,000,000 (1985 prices). Construction of the project would develop a dependable water supply yield of 14.2 million gallons per day; provide outdoor recreation for an estimated 450,000 annual visitors; and sport fishing and hunting to help meet the regional demands. The benefit-cost ratio is 1.00 to 1 (October 1985 prices, 3-1/4% interest rate) and average annual charges are $3,604,000. Average annual benefits are: flood control $1,790,000; water supply, $1,407,000; recreation $334,000; and redevelopment, $87,000. The lake is located in, or within reasonable commuting distance of Butler County Kansas, which is designated as a redevelopment area eligible for assistance under PL 89-136. Analysis of benefits and costs is based on a project life of 100 years.

NON-FEDERAL COST: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests are required to pay all costs allocated to municipal and industrial water supply, presently estimated at $26,930,000 for construction and $164,000 annually for operation and maintenance, and major replacement; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $12,222,000, and bear all costs of operation, maintenance, and replacement of recreation facilities, presently estimated at $217,000 annually; pay 35 percent of the costs allocated to flood control, presently estimated at $11,489,000, and bear all costs of operation, maintenance, and replacement of flood control facilities presently estimated at $176,000 annually; and pay $75,000 of the $231,000 presently allocated for housing betterments.

STATUS OF LOCAL COOPERATION: The Butler County Wholesale Water Supply Unit has expressed their willingness to commit financial responsibility for the entire water allocation and to provide services and facilities to dispense either raw or potable water on a non-profit basis. The cities of Douglass, Augusta, Haysville, Rose Hill, and Winfield, Kansas, and the Butler County Board of Commissioners sent letters to the Office of Management and Budget in March and April 1984 in support of the project. The Kansas Water Office (formerly Kansas Water Resources Board), in a letter dated 9 July 1982, expressed their support of the project and indicated their willingness to discuss their financial participation in construction of the project at a level consistent with the financial concepts proposed by the Department of the Army. In accordance with Section 221 of the Flood Control Act of 1970, an agreement covering local cooperation for the project will be obtained prior to initiation of construction.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $84,500,000 is an increase of $1,000,000 over the latest estimate ($83,500,000) presented to Congress. This change is due to increases in price levels.

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STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Environmental Impact Statement will be submitted concurrently with the General Reevaluation Report scheduled for September 1987.

The provisions of Section 404 of the Clean Water Act are scheduled to be met by a Section 404(b)(1) Evaluation, a public notice, a certification from the State of Kansas, and the District Commander's signature on the report in the fourth quarter of Fiscal Year 1987.

OTHER INFORMATION: Douglass Lake was authorized as a unit in a three-lake system in the Walnut River Basin. The other two authorized lakes are El Dorado, which is under construction, and Towanda, which was reclassified to the inactive category because preliminary studies indicated the project would not be economically feasible. Reformulation studies are needed to determine if Douglass Lake can satisfy a larger portion of basin needs. Preconstruction planning is scheduled for completion in June 1990.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Tulsa

Project: Douglass Lake, Kansas

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Changes (4)	Current (5)
Federal Cost (Price Level)	18,200 (Jan 63)		83,500		84,500
Reason for Change		(65,300)		(1,000)	
a. Price Escalation		62,034		1,000	
b. Design Changes		0		0	
c. Additional Functions Added Under General Authority		0		0	
d. Authorized Modification		0		0	
e. Post Contract Award and Other Estimating Adjustments		3,106		0	
f. Schedule Changes		0		0	
g. Sundry		160		0	
h. Real Estate		0		0	

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Douglass Lake, Kansas

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APPROPRIATION TITLE: General Investigations - Advance Engineering and Design - Reservoirs (Flood Control)

PROJECT: Trinity River, Channel to Liberty, Texas (Continuation of Planning)

LOCATION AND DESCRIPTION: The project is located in Chambers and Liberty counties on the Trinity River in Texas. The Navigation Channel, Channel to Liberty, would begin at the Houston Ship Channel and cross the Trinity Bay area in an easterly direction to intersect the Double Bayou Channel located about midpoint of the eastern shoreline. The navigation channel would then turn northward along the coastline to Wallisville Lake and continue northward through the lake to tie into a 200-foot wide flood control channel that extends generally along the course of the Trinity River to RM 45 above Liberty, Texas.

AUTHORIZATION: River and Harbor Act of 1965

BENEFIT-COST RATIO: The benefit-cost ratio last presented to Congress (FY 1986) was 1.8 to 1 at 3-1/4 percent for the Trinity River Project. The current benefit-cost ratio for the Channel to Liberty portion is 1.9 to 1 based on operation as a part of the Trinity River system.

SUMMARIZED FINANCIAL DATA

Estimated Total Appropriation Requirement	$139,800,000		Preconstruction Planning Estimate	$3,500,000
Estimated Federal Cost		$ 139,800,000	Allocations to 30 September 1985	1,992,000
Estimated Non-Federal Cost		35,400,000	Conference Allowance for FY 1986	500,000
Cash Contributions	26,200,000		Allocation for FY 1986	150,000 1/
Other	9,200,000		Planning Allocation for FY 1987	200,000
Total Estimated Project Cost		$175,200,000	Balance to Complete Preconstruction Planning After FY 1987	1,158,000

1/ Reflects $350,000 reduction assigned as savings and slippage.

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Division: Southwestern

District: Fort Worth

Region: Texas Gulf
Trinity River,
Channel to Liberty, Texas

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JUSTIFICATION: The lack of sufficient channel capacity reduces the efficiency of operation of existing flood control lakes and aggravates flood problems. The channel would provide a modern navigation system to the Port of Liberty, capable of accommodating tows operating on the Gulf Intracoastal Waterway with little or no restaging. The plan would also provide for substantial reduction of flood damages in the Liberty area and to a lesser depree in the developed areas downstream of Liberty. The average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$ 10,889,000
Recreation	180,000
Navigation	1,999,000
Total	$ 13,068,000

NON-FEDERAL COST: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority leadership, local interests are required to provide lands, easements, rights-of-way, and material disposal areas presently estimated at $4,867,000; relocate roads and utilities except railroad bridges, where necessary in the construction of the project, presently estimated at $3,763,000; pay one-half of the separable costs allocated to recreation, presently estimated at $249,000; and bear all costs of operation and maintenance of recreation facilities, presently estimated at $152,700 annually; pay twenty-five percent of cost allocated to flood control, presently estimated at $26,521,000; and bear all cost of operation and maintenance of flood control facilities, presently estimated at $226,000 annually.

STATUS OF LOCAL COOPERATION: The Trinity River Authority, a State agency, signed assurances on 20 March 1969 and on 18 July 1969 that it would provide the items required of local interests. By letter dated 25 June 1980 from the Trinity River Authority, assurances were reconfirmed. On 19 April 1972, an agreement in the form required by Section 221 of the Flood Control Act of 1970 was entered into by the Trinity River Authority and the Government with respect to the project. The Trinity River Authority, the designated local sponsor for this project, is a State agency with taxing authority when approved by a majority of the voters and in a majority of the counties involved. The Trinity River Authority was informally contacted on 27 July 1982 regarding their support of the project. By letter dated 27 August 1982, they support development of the Channel to Liberty portion of the project and are willing to financially participate in the construction of the project at a level consistent with the financial concepts proposed by the Department of the Army.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $139,800,000 is a decrease of $23,200,000 from the latest estimate ($163,000,000) submitted to Congress. This change includes a decrease of $25,292,000 based on adjustments between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority leadership. This decrease was partially offset by an increase of $2,092,000 for price levels.

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STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The draft Environmental Impact Statement was filed with the Environmental Protection Agency 31 August 1979. The final Environmental Impact Statement was filed with Environmental Protection Agency 30 October 1981 for Channel to Liberty and Dallas Floodway Extension. Adverse environmental impacts include altered hydrology on wetlands of the lower Trinity River Basin, disruption of the existing aquatic system, and possible disruption of archeological resources. The Environmental Impact Statement will be submitted to Congress concurrently with the Habitat Mitigation Report.

The provisions of Section 404 of the Clean Water Act will be met with the submission of the Environmental Impact Statement, including a Section 404(b)(1) Evaluation to Congress and will require a subsequent appropriation or authorization action on this project by Congress.

The Habitat Mitigation Report will be submitted to Congress concurrently with the Environmental Impact Statement.

OTHER INFORMATION. Funds to initiate preconstruction planning for the entire Trinity River Project were appropriated in FY 1970. Preconstruction planning for the Channel to Liberty has slipped from September 1987 to September 1990. Sizing of channel is being delayed until Wallisville injunction has been resolved, also right-of-entry is not accessible for revised scope of geotechnical explorations. The Dallas Floodway portion has been placed in the inactive category at the present time because of the lack of a local sponsor. The Tennessee Colony Lake has been placed in the inactive category because of the extensive lignite deposits that exist in the area.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Fort Worth

Project: Trinity River, Channel to Liberty, Texas

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	594,500 (Jul 73)		163,000		139,800
Reason for Change		(-431,500)		(-23,200)	
a. Price Escalation		513,293		2,092	
b. Design Changes		-223,249		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		33,692		0	
e. Post-Contract Award and Other Estimating Adjustments		14,698		-25,292 1/	
f. Schedule Changes		0		0	
g. Sundry		-936,081		0	
h. Real Estate		166,147		0	

1/ Based on adjustments between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

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APPROPORIATION TITLE: General Investigations - Advance Engineering and Design - Multiple Purpose (Power Project)

PROJECT: Rockland Lake, Texas (Initiation of Planning)

LOCATION AND DESCRIPTION: The project is located in seven counties in southeast Texas at river mile 160.4 on the Neches River, approximately 28 miles south of Lufkin, Texas. The lake would contain 3,287,300 acre-feet of storage which 1,117,200 acre-feet are for water conservation and power generation. This storage will provide an estimated yield of 540 mgd or 605,300 acre-feet a year and generate approximately 57,600 MWH of average annual energy. Flood control will be provided by 1,020,100 acre-feet of storage and would reduce flooding along the Neches River. Recreation facilities will be provided to handle an expected annual visitation of 3,143,500. Rockland Lake will be created by a rolled earth embankment approximately 12,500 feet long with a maximum height of 113 feet. A saddle dike of approximately 12,200 feet will be needed in an area north of the main embankment. The spillway will be located in another saddle between the main embankment and the dike and will be a 600-foot concrete rectangular broad crested weir with a chute and stilling basin. The intake tower will service both the 20-foot diameter flood control conduit and the two 16-foot diameter penstocks. Two generating units will be installed with a total capacity of 13,500 kilowatts.

AUTHORIZATION: River and Harbor Act of 1945.

BENEFIT-COST RATIO: The benefit-cost ratio for this project is 2.1 to 1 at 2-1/2 percent based on its functioning independently. Economic analysis of project benefits and costs are based on 2-1/2% interest rate and 100-yr amortization period.

SUMMARIZED FINANCIAL DATA

Estimated Total Appropriation Requirement	$145,900,000		Preconstruction Planning Estimate	$4,400,000
Estimated Federal Cost		$ 145,900,000	Allocations to 30 September 1985	0
Estimated Non-Federal Cost		621,100,000	Conference Allowance for FY 1986	250,000
Flood Control	22,496,000		Allocation for FY 1986	250,000
Water Supply	418,935,000		Planning Allocation for FY 1987	450,000
Recreation	104,120,000		Balance to Complete Preconstruction	
Power	75,549,000		Planning After FY 1987	3,700,000
Total Estimated Project Cost		$767,000,000		

Division: Southwestern

District: Fort Worth

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Region: Texas Gulf

Rockland Lake, Texas

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JUSTIFICATION: The project will reduce flooding for the many vacation, residential and industrial structures along the Neches River, and for development in Beaumont, Texas. The current value of damageable property in the flood plain is estimated at $177,394,000. Estimated damages which would result under 1985 development and October 1985 price levels, should a flood of the magnitude of the April-September 1884 flood occur today are $20,938,000 of which $6,058,000 would be prevented by Rockland Lake. The average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$ 4,330,000
Water Supply	28,125,000
Recreation	13,812,000
Hydropower	4,914,000
Total	$51,181,000

NON-FEDERAL COSTS: Local interests are required to comply with the provisions of the Uniform Relocations Act (PL 91-646), in acquiring real property. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority leadership, local interests are required to provide $22,496,000 for flood control, $418,935,000 for water supply, $75,549,000 for hydropower, and $104,120,000 for recreation, for a total of $621,100,000. Annual costs to local interests for maintenance, operation, and replacements are estimated to be $370,000 for water supply, $590,000 for hydropower, and $470,000 for recreation, for a total of $1,430,000.

The authorizing act provides that: Before construction is started upon any element of the authorized system, the State of Texas or other responsible local agency give assurances satisfactory to the Secretary of War that upon completion of the entire four lake system (Sam Rayburn Reservoir, B.A. Steinhagen Reservoir, Rockland Lake, and Dam "A" Lake) it will contribute toward the first cost of the work the sum of $5,000,000. The Lower Neches Valley Authority (LNVA) is the local sponsor for Rockland Lake. By letter, dated November 15, 1946, the Corps of Engineers suggested to the Lower Neches Valley Authority that it contribute its $5,000,000 toward the first cost of the system upon completion of Sam Rayburn and B.A. Steinhagen Reservoirs, instead of making this contribution upon the completion of the entire authorized system which includes Rockland and Dam "A" Lakes. The Lower Neches Valley Authority agreed to this suggestion and in 1949 paid $1,500,000 and in 1950 paid $500,000 toward the construction of B.A. Stenhagen Reservoir. At the completion of Sam Rayburn Reservoir, the Lower Neches Valley Authority paid another $3,000,000 which completed the local requirements as outlined in the authorizing document.

STATUS OF LOCAL COOPERATION: The Lower Neches Valley Authority was contacted on 28 July 1982, regarding their support of the project. They stated they support development of the project and are willing to financially participate in the construction of the project at a level consistent with the Administration's proposed up front financing and cost sharing policies for construction. They realize the cost sharing policies are voluntary and are subject to adjustment reflecting Congressional action. A letter of intent from the Lower Neches Valley Authority, dated 17 August 1982, has been received expressing the above attitude.

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COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $145,900,000 is a decrease of $588,100,000 from the latest estimate ($734,000,000) submitted to Congress. This change includes decreases of $594,393,000 based on adjustments between Federal and non-Federal cost estimates consistent with cost sharing and financing concepts agreed to by the Administration and the Senate Majority leadership. These decreases were partially offset by an increase of $6,293,000 for higher price levels.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: An Environmental Impact Statement will be prepared during the preconstruction planning and engineering studies. The Environmental Impact Statement will address the environmental effects of Rockland Lake and its effect on portions of the Big Thicket National Preserve along the Neches River.

The provisions of Section 404 of the Clean Water Act will be met with the submission of an Environmental Impact Statement, including a Section 404(b)(1) Evaluation, to Congress December 1989 and will require a subsequent appropriation action by Congress. In addition to satisfy state requirements, we will obtain a water quality certificate from the State of Texas.

OTHER INFORMATION: Preconstruction planning is scheduled to be completed in September 1992.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Fort Worth

Project: Rockland Lake, Texas

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	734,000 (Oct 84)		734,000		145,900
Reason for Change				(-588,100)	
a. Price Escalation		0		6,293	
b. Design Changes		0		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimating Adjustments		0		0	
f. Schedule Changes		0		-594,393 1/	
g. Sundry		0		0	
h. Real Estate		0		0	

1/ Based on adjustments between Federal and non-Federal cost estimates consistent with cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

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APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Corpus Christi Ship Channel, Texas (1968 Act) (Continuing)

LOCATION: Project is located in Nueces County on the southern portion of the coast of Texas, 180 miles southwest of Galveston and 132 miles north of the Rio Grande.

AUTHORIZATION: River and Harbor Act of 1968 and Water Resources Development Act of 1976

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 9.9 to 1 at 3 1/4 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1971) was 5.1 to 1. The benefit-cost ratio was based on incremental benefits and cost associated with this project modification.

SUMMARIZED FINANCIAL DATA		Accum. % Est. Fed. (CofE) Cost
Estimated Federal Cost (Corps of Engineers)	$58,500,000	
Estimated Federal Cost (U. S. Coast Guard)	530,000	
Estimated Non-Federal Cost	8,650,000	
Cash Contribution $4,150,000		
Other Cost 4,500,000		
Total Estimated Project Cost	$67,680,000	
Allocations to 30 September 1985	32,755,000	
Conference Allowance for FY 1986	9,600,000	
Allocation for FY 1986	7,300,000 1/	
Allocations to Date	40,055,000	68
Allocation Requested for FY 1987	7,000,000	80
Scheduled Balance to Complete after FY 1987	8,042,000	
Unscheduled Balance to Complete after FY 1987	3,403,000 2/	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	57	Dec 1988 2/
Lands and Damages	14	Aug 1986
Channels	55	Dec 1988

1/Reflects $2,300,000 reduction assigned as savings and slippage.
2/Construction of second mooring area is unscheduled pending determination of need.

Division: Southwestern District: Galveston Region: Texas-Gulf

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Corpus Christi Ship Channel, Texas (1968 Act)

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PHYSICAL DATA

Channels:
- Outer Bar Channel - 47' x 700' x 4.1 miles
- Jetty Channel - 45'-47' x 700'-600' x 1.8 miles
- Inner Basin to Corpus Christi T.B. (Including Initial Mooring Area) - 45' x 500' x 20.7 miles
- Industrial Canal - 45' x 400' x 1.1 miles
- Channel to Chemical T.B. - 45' x 500'-550' x 0.7 mile
- Tule Lake Channel - 45' x 400' x 2.7 miles
- Viola Channel - 45' x 400' x 1.8 miles
- La Quinta Channel - 45' x 300' x 5.6 miles

Turning Basins:
- Corpus Christi T.B. - 45' x 800' x 1.0 mile
- Avery Point T.B. - 45' x 975' x 0.2 mile
- Chemical T.B. - 45' x 1,200' (Diameter)
- Tule Lake T.B. - 45' x 1,000' x 0.2 mile
- Viola T.B. - 45' x 1,200' (Diameter)
- La Quinta T.B. - 45' x 1,200' x 0.2 mile

Mooring Area (2)
- Port Ingleside - 1 6-Dolphin and 1 7-Dolphin

JUSTIFICATION: All the channels are frequently used by vessels larger than those for which the channels were designed. The larger vessels can be maneuvered in the existing turning basins only with extreme care and caution. Enlargement of the basins is needed to reduce the difficulty attendant to existing traffic. The inner basin area is subject to very strong ebb and flood tides causing vessels to experience difficulty in maneuvering from the jetty channel through the inner basin into the main channel. An inshore anchorage or mooring area is needed to permit safe deep-draft anchorage for ships awaiting berthing areas along the waterway. Vessels now have to anchor in the Gulf of Mexico which creates difficulties during adverse weather. Commerce on the channel deepened to the authorized depth of 45 feet will increase by an estimated $15,000,000 tons annually. Average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Navigation	$29,194,400
Urban Enhancement	2,236,200
TOTAL	$31,430,600

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FISCAL YEAR 1987: The requested amount will be applied as follows:

Complete construction of retaining works, Suntide	$2,492,000
Initiate dredging Chemical Turning Basin through and including Tule Lake Turning Basin	3,988,000
Complete berm stabilization for Rincon area levees	330,000
Engineering and Design	20,000
Supervision and Administration	170,000
TOTAL	$7,000,000

The funds requested above are required to continue construction and meet the scheduled completion date.

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COMPLETED OR REMAINING MODIFICATIONS: Work completed consists of a north jetty 9,240 feet long, and a south jetty 7,385 feet long at Aransas Pass; a 19,000-foot-long stone dike on St. Joseph Island; Inner Basin at Harbor Island 40 feet deep, 600 feet wide by 1,610 feet long; a 12-foot channel from the Inner Basin to the town of Port Aransas; and 40-foot channel from Port Aransas (Gulf of Mexico) to Viola Turning Basin; an anchorage basin 12 feet deep, 300 to 400 feet wide at Turtle Cove; a 36 x 200-foot channel from the main channel near Port Ingleside to La Quinta, Texas; and a 12 x 100-foot channel from La Quinta Channel to Jewel Fulton Turning Basin. The cost of this completed work is $18,868,000. There are no uncompleted modifications.

NON-FEDERAL COST: Local interests are required to furnish all lands, easements, and rights-of-way required for channel construction; accomplish relocations; and contribute 25 percent of the costs of areas required for initial and subsequent disposal of dredged material and of necessary retaining works therefor. The estimated cost to the local sponsor for complying with the requirements of local cooperation is $8,650,000, which consists of a cash contribution of $4,150,000 for disposal areas, retaining works, and establishment of vegetation in Nueces Bay at base of south shore levee and $4,500,000 for relocations. The annual cost for maintenance is currently estimated to be $59,200.

Local interests have also incurred costs of approximately $8,200,000 in complying with the requirements of local cooperation for previous work accomplished on the waterway.

In addition, local interests advise that they have incurred costs of $4,390,000 for construction of a grain elevator near Avery Point, of over $1,300,000 for construction of a bulk materials ore dock on Tule Lake Channel, and over $5,000,000 for construction of public harbor facilities.

STATUS OF LOCAL COOPERATION: Local interests for the project are represented by the Nueces County Navigation District No. 1 (now Port of Corpus Christi Authority). The written local cooperation agreement as required by Section 221 of the Flood Control Act of 1970 was approved by the Southwestern Division Engineer on 18 May 1972. The Section 221 agreement was revised to reflect requirements of Section 124 of the Water Resources Development Act of 1976 and was approved 30 September 1982.

COMPARISON OF FEDERAL (CORPS OF ENGINEERS) COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $58,500,000 is a decrease of $21,200,000 from the latest estimate ($79,700,000) submitted to Congress. This change reflects decreases of $1,519,000 in the estimated inflation allowance through the construction period; $11,300,000 based on receipt of favorable bids; $7,015,000 for more detailed planning of construction; and $1,885,000 based on a reanalysis of requirements for Supervision and Administration. These decreases were partially offset by an increase of $519,000 based on current appraisal for lands.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Environmental Impact Statement was filed with the Council on Environmental Quality in May 1971. A draft supplement covering disposal areas for dredged material was submitted to the Environmental Protection Agency in August 1981. The final supplement was submitted to the Environmental Protection Agency on 14 June 1982.

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The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation, a Public Notice and Hearing held in September 1981, the completion of a Section 404 evaluation with the District Engineer's signature on 14 June 1982, and a Water Quality Certificate by the State of Texas on 2 August 1982.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1970 and were allocated in FY 1971. Funds to initiate construction were appropriated in FY 1971 and were allocated in FY 1972.

The Water Resources Development Act of 1976 substantially modified the local cooperation requirements. Section 124 of the Act shifts the responsibility for the cost of disposal areas and confinement works on the project from the Nueces County Navigation District No. 1 (now Port of Corpus Christi Authority), the local sponsor, to a joint Federal and non-Federal responsibility (75 percent Federal and 25 percent non-Federal).

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Galveston

Project: Corpus Christi Ship Channel, Texas (1968 Act)

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	$20,400 (Jul 70)		$79,700 1/		$58,500 1/2/
Reason for Change		($59,300) 1/		(-$21,200) 2/	
a. Price Escalation		36,413		-1,531	
b. Design Changes		1,440		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		6,800		0	
e. Post-Contract Award and Other Estimated Adjustments		14,647		-20,200 3/	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		+531 4/	

1/Includes an allowance for estimated inflation through the construction period.
2/Includes a decrease of $1,519 for adjustments in estimated inflation allowance through the construction period.
3/Includes decreases of $11,300 based on receipt of favorable bids, $7,015 for more detailed planning of construction, and $1,885 based on reanalysis of requirements for Supervision and Administration.
4/Includes increases of $519 for current appraisal for lands and $12 for inflation allowance through the construction period.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Channels and Harbors (Navigation)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
Fiscal Years 1986 and 1987

ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
LANDS AND DAMAGES	1,872,000	254,000	1,618,000	0	0
RELOCATIONS	392,000	0	392,000	0	0
CHANNELS	51,566,000	26,586,000	6,315,000	7,751,000	10,914,000
ENGINEERING AND DESIGN	5,480,000 1/	5,181,000	170,000	40,000	89,000
SUPERVISION AND ADMINISTRATION	3,340,000	2,301,000	300,000	297,000	442,000
TOTAL APPLIED COST (CofE Funds and Non-Federal Contributions)	62,650,000	34,322,000	8,795,000	8,088,000	11,445,000
Undistributed Cost :None)					
TOTAL PROJECT COST (CofE Funds and Non-Federal Contributions)	62,650,000	34,322,000	8,795,000	8,088,000	11,445,000
Pending Adjustments (None)					
TOTAL COST (CofE Funds and Non-Federal Contributions)	62,650,000	34,322,000	8,795,000	8,088,000	11,445,000
Undelivered Orders		+257,000	-257,000		
TOTAL OBLIGATIONS		34,579,000	8,538,000	8,088,000	11,445,000
FEDERAL FUNDS					
TOTAL COST	58,500,000	32,455,000	7,600,000	7,000,000	11,445,000
Undelivered Orders		+232,000	-232,000		
TOTAL OBLIGATIONS		32,687,000	7,368,000	7,000,000	11,445,000
NON-FEDERAL CONTRIBUTIONS					
TOTAL COST - CASH	4,150,000	1,867,000	1,195,000	1,088,000	0
Undelivered Orders		+25,000	-25,000		
TOTAL OBLIGATIONS		1,892,000	1,170,000	1,088,000	0

1/ E&D estimate includes 20,000 for RE activities (deed and title checks, gross appraisals, and field inspections).

EFFECTIVE DATE 1 JANUARY 1986 DIVISION: SOUTHWESTERN DISTRICT: GALVESTON REGION: TEXAS-GULF BASIN: NUECES-TEXAS COASTAL PROJECT: CORPUS CHRISTI SHIP CHANNEL, TEXAS (1968 ACT)

4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Channels and Harbors (Navigation)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
Fiscal Years 1986 and 1987

ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
METHOD OF FINANCING					
FEDERAL FUNDS					
Allocations		32,755,000	7,300,000 1/		
Unobligated Carryover from Prior Year			68,000		
Total Funds Available for Obligation			7,368,000		
Appropriation Required				7,000,000	11,445,000
NON-FEDERAL CONTRIBUTIONS - CASH		3,091,000	0		
Unobligated Carryover from Prior Year			1,199,000	29,000	
Total Funds Available for Obligation			1,199,000		
Contributions Required (Cash)				1,059,000	0
NON-FEDERAL COSTS					
Cash Contributions	4,150,000	1,867,000	1,195,000	1,088,000	0
Other Costs	4,500,000	4,455,000	0	45,000	0
Relocations	(4,500,000)	(4,455,000)	(1,195,000)	(45,000)	(0)
TOTAL NON-FEDERAL COSTS	8,650,000	6,322,000	1,195,000	1,133,000	0
TOTAL PROJECT COSTS					
Federal (Corps) Costs and Non-Federal Costs	67,150,000	38,777,000	8,795,000	8,133,000	11,445,000

1/Reflects 2,300,000 assigned as savings and slippage.

EFFECTIVE DATE 1 JANUARY 1986 DIVISION: SOUTHWESTERN DISTRICT: GALVESTON REGION: TEXAS-GULF BASIN: NUECES-TEXAS COASTAL PROJECT: CORPUS CHRISTI SHIP CHANNEL, TEXAS (1968 ACT)

4 FEB 1986 614

APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Freeport Harbor, Texas (1970 Act) (Continuing)

LOCATION: The project is located in Brazoria County on the central coast of Texas, 47 miles southwest of Galveston Harbor Channel entrance and 72 miles northeast of Matagorda Ship Channel entrance.

AUTHORIZATION: River and Harbor Act of 1970 and Supplemental Appropriations Act of 1985 (Public Law 99-88).

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio for the authorized project is 6.2 to 1 at 8 1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 5.7 to 1. The benefit-cost ratio is based on incremental benefits and cost associated with this project modification.

SUMMARIZED FINANCIAL DATA

Estimated Appropriation Requirement (CofE)		$70,153,000
Estimated Appropriation Requirement (Coast Guard)		465,000
Estimated Total Appropriation Requirement		70,618,000
Future Non-Federal Reimbursement		8,901,000
Estimated Federal Cost (Ultimate)		61,717,000
Estimated Non-Federal Cost		42,609,000
Scheduled Construction	42,609,000	
Cash Contribution	23,401,000	
Other Costs	10,307,000	
Reimbursements:	8,901,000	
Deep-Draft Navigation	8,901,000	
Total Estimated Project Cost		104,326,000

		Accum. @ Est. Fed. (CofE) Cost
Allocations to 30 September 1985	983,000	
Conference Allowance for FY 1986	0	
Potential Allocation for FY 1986	2,665,000	
Potential Allocations through FY 1986	3,648,000	5
Allocation Requested for FY 1987	9,900,000 1/	19
Scheduled Balance to Complete after FY 1987	56,605,000	
Unscheduled Balance to Complete after FY 1987	0	

1/Obligation and expenditure of budgeted funds for construction of this project are contingent upon enactment of legislation enabling recovery of all or part of the costs to be expanded by the project sponsor and the Federal Government.

Division: Southwestern District: Galveston Region: Texas-Gulf

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STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	Not started	Sep 1991
Relocations	0	Mar 1989
Channels	0	Sep 1991
Breakwaters	0	Sep 1990
Recreation	0	Sep 1990

PHYSICAL DATA

Channels:
- Outer Bar Channel - 47' x 400' x 3.0 miles
- Jetty Channel - 45' x 400' x 0.8 mile
- Channel to Brazosport T.B. - 45' x 400' x 1.2 miles
- Channel to Upper Basin - 45' x 375' x 1.4 miles
- Brazos Harbor Channel - 36' x 200' x 0.5 mile

Jetties:
- North Jetty Relocation - 4,200'
- North Jetty Shoreline Protection - 3,500'
- South Jetty - Rehabilitate existing jetty

Turning Basins:
- Brazosport T.B. - 45' x 1,000' (Diameter)
- Upper T.B. - 45' x 1,200' (Diameter)
- Quintana T.B. - 45' x 750' (Diameter)
- Brazos Harbor T.B. - 36' x 750' (Diameter)

Recreation Areas - 1 each

Relocation - Coast Guard Station

JUSTIFICATION: The narrow 200-foot-wide jetty channel, sharp curves at the inner end of the jetty channel and at the upper end of Brazosport turning basin, and limited maneuvering areas in the existing turning basins, all contribute to inadequate conditions for safe navigation by deep-draft traffic. Because of the hazards of these problem areas, deep-draft vessel movements are restricted to one-way traffic, with no passing or meeting in the channels inland from the jetty entrance. Strong cross winds and currents, and periods of fog or other adverse weather, may delay or prevent traffic from entering or leaving the jetty channel. When transiting the jetty and inside channels, vessels are operated at low or dead-slow speeds to minimize possible damages from collisions with berthed vessels or shore installations. When traveling at slow speeds, vessels sometime lose effective rudder control and strike the channel banks, which, in turn may cause the vessel to "shear", or change course slightly. Turning of vessels in turning basins is being accomplished only by slow and careful maneuvering and the assistance of harbor tugs. Enlargement of the turning basins is needed both for the existing traffic and for the larger vessels that will be used in the future. Tankers with drafts of 32 feet or greater are now using the main channel and it is evident that the safe depth of 32 feet is frequently exceeded. Because of inadequate project depth at Freeport, vessels are often light-loaded and some of the large vessels will not call at Freeport because of the inadequate channel depth. The average annual benefits for the authorized project are as follows:

Benefits	Amount (1 October 1985)
Navigation	$65,750,600
Recreation	606,400
TOTAL	$66,357,000

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FISCAL YEAR 1987: The requested amount will be applied as follows:

Coast Guard Design Cost	$ 280,000
Construct New Coast Guard Station	1,400,000
Relocations	350,000
Continue Construction of Jetties	6,800,000
Engineering and Design	180,000
Supervision and Administration	890,000
Total	$9,900,000

The funds requested are required to continue construction and meet the scheduled completion dates.

COMPLETED OR REMAINING MODIFICATIONS: Work completed consists of a northeasterly jetty 7,700 feet long, a southwesterly jetty 6,640 feet long, an outer bar channel 38' x 200' x 16,000'; a jetty channel 36' x 200' x 4,400'; a channel to the Brazosport turning basin 36' x 200'-350' x 6,351'; Brazosport turning basin 36' x 744'-800' x 667'; a channel to Upper Basin 36' x 350'-275' x 7,156'; an upper turning basin 36' x 600' x 600'; a channel to the Stauffer Chemical Plant 25' x 200' x 6,090'; Brazos Harbor Channel 30' x 200' x 2,690'; and the Brazos Harbor turning basin 30' x 525'-675' x 675'. The cost of this completed work is $1,973,755.

NON-FEDERAL COSTS: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and material disposal areas, presently estimated at $9,683,000; modify or relocate utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $624,000; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $460,000; and bear all cost of operation and maintenance of recreation facilities, presently estimated at $10,000 annually and of retaining works for dredged material, presently estimated at $106,000 annually; and, during construction, pay 25 percent of the construction costs allocated to deep-draft navigation, presently estimated at $22,941,000; and pay an additional 10 percent of the construction costs allocated to deep-draft navigation within a period of 30 years following completion, presently estimated at $6,901,000.

STATUS OF LOCAL COOPERATION: By letters of assurance, dated 16 September 1985, the local sponsor, Brazos River Harbor Navigation District, agreed to provide required local cooperation for relocating 3,700 feet of the North Jetty and for the remainder of the deepening project. However, the local sponsor agreed to provide local cooperation for the deepening of the project only if enabling legislation applicable to all ports permits each port authority to levee user tariffs on vessels using the Navigation District channel; permits diversion of some portion of custom fees for that purpose; or provides some other statutory authority applicable to all ports that would generate revenue from users of the facility and permit the continuation of competition among public ports and provide a source of revenue bonds to pay its share of the construction cost of the project. The Local Cooperation Agreement is scheduled to be signed by the local sponsor in March 1986.

Freeport Harbor, Texas (1970 Act)

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COMPARISON OF FEDERAL (CORPS OF ENGINEERS) COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $70,153,000 is an increase of $11,215,000 over the latest estimate ($58,938,000) submitted to Congress (Fiscal Year 1985). This increase reflects an adjustment in the estimated inflation allowance through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Environmental Protection Agency on 2 March 1979.

The provisions of Section 404 of the Clean Water Act have been met. Congressional approval of the Section 404 evaluation was received in the Fiscal Year 1981 Energy and Water Development Appropriation Act, Public Law 96-367.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1973 and were allocated in FY 1974. Funds to initiate construction were appropriated by the FY 1985 Supplemental Appropriations Act.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Galveston

Project: Freeport Harbor, Texas (1970 Act)

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	$58,938 (Oct 83)		$58,938 (Oct 83)		$70,153 1/2/
Reason for Change		(0)		($11,215) 2/	
a. Price Escalation		0		11,215	
b. Design Changes		0		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimated Adjustments		0		0	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		0	

1/Includes an allowance for estimated inflation through the construction period.
2/Includes an increase of $11,215 for estimated inflation through the construction period.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Channels and Harbors (Navigation)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
Fiscal Years 1986 and 1987

ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
RELOCATIONS	5,050,000	0	0	2,890,000	2,160,000
CHANNELS	37,130,000	0	0	0	37,130,000
BREAKWATERS	39,884,000	0	800,000	11,626,000	27,458,000
RECREATION	1,710,000	0	0	0	1,710,000
ENGINEERING AND DESIGN	2,175,000 1/	791,000	110,000	240,000	1,034,000
SUPERVISION AND ADMINISTRATION	7,605,000	94,000	110,000	1,308,000	6,093,000
TOTAL APPLIED COST (Federal Funds and Non-Federal Contributions)	93,554,000	885,000	1,020,000	16,064,000	75,585,000
Undistributed Cost (None)					
TOTAL PROJECT COST (Federal Funds and Non-Federal Contributions)	93,554,000	885,000	1,020,000	16,064,000	75,585,000
Pending Adjustments (None)					
TOTAL COST (Federal Funds and Non-Federal Contributions)	93,554,000	885,000	1,020,000	16,064,000	75,585,000
Undelivered Orders			+2,148,000	-2,148,000	
TOTAL OBLIGATIONS		885,000	3,168,000	13,916,000	75,585,000
FEDERAL FUNDS					
TOTAL COST	70,153,000	885,000	615,000	12,048,000	56,605,000
Undelivered Orders			+2,148,000	-2,148,000	
TOTAL OBLIGATIONS		885,000	2,763,000	9,900,000	56,605,000
NON-FEDERAL CONTRIBUTIONS					
TOTAL COST - CASH	23,401,000	0	405,000	4,016,000	18,980,000
Undelivered Orders (None)					
TOTAL OBLIGATIONS		0	405,000	4,016,000	18,980,000

1/ E&D estimate includes 65,000 for RE activities (deed and title checks, gross appraisals, and field inspections).

EFFECTIVE DATE 1 JANUARY 1986 DIVISION: SOUTHWESTERN DISTRICT: GALVESTON REGION: TEXAS-GULF BASIN: BRAZOS PROJECT: FREEPORT HARBOR, TEXAS (1970 ACT)

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Channels and Harbors (Navigation)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
Fiscal Years 1986 and 1987

ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
METHOD OF FINANCING					
FEDERAL FUNDS					
Allocations		983,000	2,665,000 1/		
Unobligated Carryover from Prior Year			98,000		
Total Funds Available for Obligation			2,763,000		
Appropriation Required				11,100,000	56,605,000
NON-FEDERAL CONTRIBUTIONS - CASH		0	405,000		
Unobligated Carryover from Prior Year			0		
Total Funds Available for Obligation			405,000		
Contributions Required				4,470,000	18,980,000
1/Reflects 2,665,000 potential allocation for FY 1986.					
NON-FEDERAL COST					
Cash Contribution	23,401,000	0	405,000	4,016,000	18,989,000
Other Costs	10,307,000	0	1,506,000	0	8,801,000
Relocations	(624,000)	(0)	(0)	(0)	(624,000)
Lands and Damages	(6,566,000)	(0)	(1,506,000)	(0)	(5,060,000)
Levees and Spillways	(3,017,000)	(0)	(0)	(0)	(3,017,000)
E&D Administration	(100,000)	(0)	(0)	(0)	(100,000)
TOTAL NON-FEDERAL COST	33,708,000	0	1,911,000	4,016,000	27,781,000
TOTAL PROJECT COST					
Federal (Corps) Costs and Non-Federal Costs	103,861,000	885,000	2,526,000	16,064,000	84,386,000

EFFECTIVE DATE 1 JANUARY 1986 DIVISION: SOUTHWESTERN DISTRICT: GALVESTON REGION: TEXAS-GULF BASIN: BRAZOS PROJECT: FREEPORT HARBOR, TEXAS (1970 ACT)

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APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Mouth of Colorado River, Texas (Continuing)

LOCATION: The project is located on the lower reach of the Colorado River in Matagorda County, Texas. The project extends from the mouth of the Colorado River at the Gulf of Mexico to the town of Matagorda, Texas.

AUTHORIZATION: River and Harbor Act of 1968

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 10.5 to 1 at 3 1/4 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1979) was 1.6 to 1. The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA		Accum. % Est. Fed. (CofE) Cost
Estimated Federal Cost (Corps of Engineers)	$29,600,000	
Estimated Federal Cost (U. S. Coast Guard)	20,000	
Estimated Non-Federal Cost	6,224,000	
Cash Contribution $3,714,000		
Other Costs 2,510,000		
Total Estimated Project Cost	$35,844,000	
Allocations to 30 September 1985	11,840,000	
Conference Allowance for FY 1986	6,000,000	
Allocation for FY 1986	2,440,000 1/	
Allocations to Date	14,280,000	48
Allocation Requested for FY 1987	4,700,000	64
Scheduled Balance to Complete After FY 1987	10,620,000	
Unscheduled Balance to Complete After FY 1987	0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	45	Mar 1989

PHYSICAL DATA

Channels:
- Entrance Channel - 15' x 200' x 3,500'
- Navigation Channel - 12' x 100' x 6.5 miles
- Diversion Channel - 20' x 250' x 3.1 miles and 18' x 125' x 1.7 miles

Turning Basin:
- Matagorda Turning Basin - 12' x 350' x 1,450'

Jetties:
- East Jetty - 2,650' in length
- West Jetty - 1,450' in length

Dams:
- Tiger Island Channel Dam
- Diversion Dam

Recreation Areas - 2 each

Fish and Wildlife Facility - Oyster cultch

1/Reflects $3,200,000 reduction assigned as savings and slippage and $360,000 transfer from the project.

Division: Southwestern

District: Galveston

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Region: Texas-Gulf

Mouth of Colorado River, Texas

JUSTIFICATION: Benefits from construction of a dependable shallow-draft channel from the Gulf Intracoastal Waterway to the Gulf by way of the existing flood discharge channel would be derived from savings in transportation cost to commercial fishing boats and oil field service vessels operating in the area. The savings in travel distance per round-trip attributable to the proposed navigation improvement would be 36 miles. Recreational boating benefits would also be realized as the channel would provide access for recreational boats from inland waters to the Gulf. The existing channel is impassable much of the time and currently is not reliable. The Colorado River Channel is the only entrance from the Gulf to inland waters between Matagorda Ship Channel and Freeport Harbor for vessels seeking refuge from weather disturbances in the Gulf. The distance between the two entrance channels is about 82 miles and, on occasion, vessels caught in the Gulf off the mouth of the Colorado River must attempt to enter the river at a risk of damage or destruction. The proposed improvement would provide a reliable access to the river above Matagorda which is one of the best natural harbors of refuge along the Texas coast.

The river diversion will benefit the Gulf of Mexico and Matagorda Bay commercial fisheries by reducing bay salinities, establishing a salinity gradient in the bay, increasing the input of nutrients, and creating new intertidal marsh areas through delta growth. The plan also provides for increased oyster production by increasing the size of an existing reef and creating a new reef by placement of an oyster cultch. Implementation of the project will result in increased catches in the bay estimated at 956,000 pounds of oysters, 4,906,000 pounds of shrimp and 3,059,000 pounds of crabs per year. The annual offshore shrimp catch is estimated to increase by 494,000 pounds.

The public use areas with recreation facilities will provide public recreation opportunities in an area where there is a specific need for such development.

Diversion of the Colorado River will reduce flooding below Matagorda, Texas, thereby reducing damages to summer homes, fishing piers, and roadway which parallels the existing flood discharge channel. Average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Navigation	$ 1,944,500
Recreation	80,500
Flood Control	11,200
Commercial Fish Enhancement	11,991,200
Total	$14,027,400

Mouth of Colorado River, Texas

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FISCAL YEAR 1987: The requested amount will be applied as follows:

Initiate dredging on channels & turning basin	$1,930,000
Continue construction of diversion channel	2,030,000
Continue construction of jetty walkway	360,000
Initiate construction of diversion dam	50,000
Engineering and Design	100,000
Supervision and Administration	230,000
Total	$4,700,000

The funds requested above are required to continue construction and meet the scheduled completion date.

NON-FEDERAL COSTS: Local interests are required to furnish all lands, easements, and rights-of-way, including relocations; share in the cost for recreation facilities, including an appropriate part of the cost of the channel and jetties in accordance with general policy pertaining to small-boat harbors; construct a public landing with suitable supply facilities and necessary mooring facilities and utilities; and insure that a seafood processing plant is in operation at Matagorda, Texas. The cost to the local sponsor for complying with the requirements of local cooperation is estimated to be $6,224,000, consisting of $1,870,000 for lands and damages, $640,000 for levees, and cash contribution of $3,714,000. Local interests are also required to operate and maintain recreation facilities and disposal area levees at an estimated annual cost of $75,000.

STATUS OF LOCAL COOPERATION: By letters dated 14 February 1978, the Port of Bay City Authority and Matagorda County agreed to co-sponsor the project and provide the necessary local cooperation. The local cooperation agreement as required by Section 221 of the Flood Control Act of 1970 was approved by the District Engineer 7 December 1981. In November 1981, a bond election for $2,500,000 was passed by voters of Matagorda County.

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COMPARISON OF FEDERAL (CORPS OF ENGINEERS) COST ESTIMATE: The current Federal (Corps of Engineers) cost estimate of $29,600,000 is a decrease of $1,200,000 over the latest estimate ($30,800,000) submitted to Congress. This decrease reflects an adjustment in the estimated inflation allowance through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement on the navigation features was filed with the Environmental Protection Agency on 24 August 1978. The Section 404 evaluation on the navigation feature is included in the Environmental Impact Statement. The final Environmental Impact Statement on the diversion features was filed with the Environmental Protection Agency on 16 December 1981. The Section 404 evaluation was included in the Environmental Impact Statement.

The provisions of Section 404 of the Clean Water Act have been met for the navigation features with the submission of an Environmental Impact Statement, including a Section 404(b)(1) evaluation to Congress on 24 July 1979 and Congress subsequently appropriated funds 25 September 1979, Fiscal Year 1980 Energy and Water Development Appropriation Act, Public Law 96-69.

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The provisions of Section 404 of the Clean Water Act have been met for the diversion features by a Section 404(b)(1) evaluation, a Public Notice issued on 30 December 1981, a Certification issued by the State of Texas on 2 February 1982, and the District Engineer's signature on the Phase I General Design Memorandum on 16 March 1981.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1970 and allocated in FY 1971. Funds to initiate construction were appropriated in FY 1979.

Initiation of construction was delayed because studies were required of controlled diversion flows of the Colorado River into Matagorda Bay. These studies have been completed, coordinated with all interested individuals and other agencies, and the diversion feature has been incorporated into the project. Initiation of construction was further delayed because approved 221 agreement was not obtained until December 1981. Construction was initiated in January 1984.

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Mouth of Colorado River, Texas

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Galveston

Project: Mouth of Colorado River, Texas

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	$9,800 (Oct 77)		$30,800 1/		$29,600 1/2/
Reason for Change		($21,000) 1/		(-$1,200) 2/	
a. Price Escalation		9,200		-1,200	
b. Design Changes		-40		0	
c. Additional Function Added Under General Authorization		9,800		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimated Adjustments		2,040		0	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		0	

1/Includes an allowance for estimated inflation through the construction period.
2/Includes a decrease of $1,200 for adjustments in the estimated inflation through the construction period.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Channels and Harbors (Navigation)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
Fiscal Years 1986 and 1987

ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
DAMS	682,000	0	0	50,000	632,000
FISH AND WILDLIFE FACILITIES (Oyster Cultch)	1,325,000	0	0	0	1,325,000
CHANNELS	12,119,000	0	70,000	4,350,000	7,699,000
BREAKWATERS	13,900,000	10,862,000	2,678,000	360,000	0
RECREATION FACILITIES	785,000	0	0	0	785,000
ENGINEERING AND DESIGN	2,628,000 1/	2,217,000	200,000	100,000	111,000
SUPERVISION AND ADMINISTRATION	1,875,000	859,000	175,000	230,000	611,000
TOTAL APPLIED COST (CofE Funds and Non-Federal Contributions)	33,314,000	13,938,000	3,123,000	5,090,000	11,163,000
Undistributed Cost (None)					
TOTAL PROJECT COST (CofE Funds and Non-Federal Contributions)	33,314,000	13,938,000	3,123,000	5,090,000	11,163,000
Pending Adjustments (None)					
TOTAL COST (CofE Funds and Non-Federal Contributions)	33,314,000	13,938,000	3,123,000	5,090,000	11,163,000
Undelivered Orders		+75,000	-75,000		
TOTAL OBLIGATIONS		14,013,000	3,048,000	5,090,000	11,163,000

1/E&D estimate includes 48,000 for RE activities (deed and title checks, gross appraisals, and field inspections).

FEDERAL FUNDS					
TOTAL COST	29,600,000	11,765,000	2,515,000	4,700,000	10,620,000
Undelivered Orders		+65,000	-65,000		
TOTAL OBLIGATIONS		11,830,000	2,450,000	4,700,000	10,620,000

EFFECTIVE DATE
1 JANUARY 1986

DIVISION: SOUTHWESTERN
DISTRICT: GALVESTON

REGION: TEXAS-GULF
BASIN: COLORADO

PROJECT: MOUTH OF COLORADO RIVER, TEXAS

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL CLASSIFICATION: Channels and Harbors (Navigation)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
Fiscal Years 1986 and 1987

ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
NON-FEDERAL CONTRIBUTIONS					
TOTAL COST - CASH	3,714,000	2,173,000	608,000	390,000	543,000
Undelivered Orders		+10,000	-10,000		
TOTAL OBLIGATIONS		2,183,000	598,000	390,000	543,000
METHOD OF FINANCING					
FEDERAL FUNDS					
Allocations		11,840,000	2,440,000 1/		
Unobligated Carryover from Prior Year			10,000		
Total Funds Available for Obligation			2,450,000		
Appropriation Required				4,700,000	10,620,000
NON-FEDERAL CONTRIBUTIONS					
Contributions (Cash)		2,800,000	0		
Unobligated Carryover from Prior Year			617,000	19,000	
Total Funds Available for Obligation			617,000		
Contributions Required				371,000	543,000
1/Reflects 3,200,000 assigned as savings and slippage and 360,000 transfer from the project.					
NON-FEDERAL COSTS					
Cash Contribution	3,714,000	2,173,000	608,000	390,000	543,000
Other Costs	2,510,000	460,000	1,430,000	580,000	40,000
Lands and Damages	(1,870,000)	(460,000)	(1,280,000)	(130,000)	(0)
Relocations	(0)	(0)	(0)	(0)	(0)
Other (Levees)	(640,000)	(0)	(150,000)	(450,000)	(40,000)
TOTAL NON-FEDERAL COSTS	6,224,000	2,633,000	2,038,000	970,000	583,000
TOTAL PROJECT COSTS					
Federal (Corps) Costs and Non-Federal Costs	35,824,000	14,398,000	4,553,000	5,670,000	11,203,000

EFFECTIVE DATE 1 JANUARY 1986 DIVISION: SOUTHWESTERN DISTRICT: GALVESTON REGION: TEXAS-GULF BASIN: COLORADO PROJECT: MOUTH OF COLORADO RIVER, TEXAS

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APPROPRIATION TITLE: Construction, General - Locks and Dams (Navigation)

PROJECT: McClellan-Kerr Arkansas River Navigation System, Locks and Dams (Continuing)

LOCATION: The authorized project provides for the improvement of the Arkansas River and its tributaries by the construction of dams and channels to serve navigation, afford additional flood control, produce hydroelectric power, and provide related benefits, such as recreation and wildlife propagation. The navigation feature of the project consists of a 9-foot navigation channel from the Mississippi River to Catoosa, Oklahoma, 15 miles east of Tulsa. The route follows the White River and the Arkansas Post Canal a distance of 19 miles to the Arkansas River; thence up the Arkansas River 374 miles to the mouth of the Verdigris River in Oklahoma; and thence up the Verdigris River to Catoosa, a distance of 50 miles. The Arkansas River is a major tributary of the Mississippi River and enters the Mississippi River about 575 miles above the Head of Passes, Louisiana. The project is located in 15 counties in Arkansas and 6 counties in Oklahoma.

AUTHORIZATION: 1946 River and Harbor Act and Water Resources Development Act of 1974.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because the project is nearing completion. The benefit-to-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1963) was 1.3 to 1. The benefit-to-cost ratio was based on the project functioning as an inseparable unit of the overall McClellan-Kerr Arkansas River Multiple-Purpose Project.

SUMMARIZED FINANCIAL DATA

		Accum % of Est. Fed. (CofE) Cost
Estimated Federal Cost (CofE)	$545,590,000	
Est Fed Cost (U.S. Coast Guard)	2,268,000	
Estimated Non-Federal Cost	0	
Total Estimated Project Cost	547,858,000	
Allocations to 30 Sep 1985	539,766,000	
Conference Allowance for FY 1986	1,000,000	
Allocation for FY 1986	400,000 1/	
Allocation to Date	540,166,000	99
Allocation Requested for FY 1987	2,000,000	99
Sched Bal to Complete after FY 1987	3,424,000	
Unsched Bal to Complete after FY 1987	0	

1/ Reflects $600,000 reduction assigned as savings and slippage.

STATUS - MAJOR CONSTRUCTION (1 JANUARY 1986)

Feature	Percent Complete	Completion Schedule
Entire Project (Scheduled Features)	99	Dec 88
Entrance Channel	100	
Norrell L&D No. 1	100	
Lock and Dams Nos. 2, 3, 4, & 5	100	
David D. Terry L&D - No. 6	100	
Murray L&D - No. 7	88	Dec 88
Toad Suck Ferry L&D - No. 8	100	
Lock and Dam No. 9	98	Sep 86
Lock and Dam No. 13	100	
Maintenance and Repair Fleet and Marine Terminals	100	
W. D. Mayo L&D - No. 14	100	
Chouteau L&D - No. 17	100	
Newt Graham L&D - No. 18	100	

DIVISION: Southwestern DISTRICT: Tulsa and Little Rock REGION: Arkansas-White-Red

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McClellan-Kerr Nav L&D

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PHYSICAL DATA

Channels: White River - 9.8 mi, 300' wide, mi 9.8 to 0.0

Arkansas Post Canal - 9.2 mi, 300' wide, mi 19.0 to 9.8

Arkansas River - 374 mi, 250' wide, mi 460.2 (1940 survey) to 41.6 (1943 survey)

Verdigris River - 50.3 mi, 150' wide (1965 survey)

All navigation channels were excavated to an initial depth of 12' or more below normal pool level.

Locks: Type - Single Chamber, single lift with miter gates

Size - 110' X 600'

Normal (maximum) Lift - Varies from 14' for Lock No. 4 to 30' for Lock No. 1.

Number of Locks and Dams - 11 on Arkansas River and canal, 2 on Verdigris River.

Dams: Movable nonnavigable type with low sills, piers, tainter gates, abutments, and overflow embankments where required.

Lands and Damages:

Acres: 60,187 Type: Predominately agricultural Improvements: Typical farm units

Relocations:

Roads:	*18 miles	$45,280,000 (Replace 9 bridges, alter 3 bridges, and abandon 1 bridge.)
Railroads:	*7 miles	40,436,000 (Replace 2 bridges, alter 6 bridges, and abandon 1 bridge.)
Cemeteries, Utilities, and Structures:		30,140,000
(Conway Water Supply)		(21,448,000)

*Includes bridges

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JUSTIFICATION: The McClellan-Kerr Arkansas River Navigation System was conceived and authorized as an overall plan made up of a group of interrelated elements consisting of lakes, multiple-purpose structures, navigation structures, and bank stabilization works, all designed on a coordinated basis to provide for development of optimum benefits. Construction of the project must follow this coordinated plan if full benefits are to be realized. In eastern Oklahoma, construction of Keystone and Eufaula Lakes, Robert S. Kerr Lock and Dam, Webber Falls Lock and Dam and the initial and second phase of Oologah Lake are complete, as is construction of Dardanelle Lock and Dam and the Ozark-Jeta Taylor Lock and Dam in central Arkansas and construction of bank stabilization and channel rectification between the Robert S. Kerr Dam in Oklahoma and the mouth. Completion of the navigation route to Tulsa (Catoosa) is a significant benefit to the economy of the surrounding area where existing industrial facilities have been considerably expanded and new industrial plants constructed in the past few years. In 1985, the fifteenth year the project was open to Tulsa (Catoosa), an estimated 8,540,000 tons of cargo were moved on the navigation system. Of this traffic, 2,150,000 tons were inbound; 3,330,000 tons were outbound, 2,550,000 tons were moved internally; and 510,000 tons were through traffic. These movements included such commodities as rock, grain, iron and steel, chemicals, chemical fertilizers, coal, petroleum products, and sand and gravel. It had been estimated that about one million tons of commercial traffic would move in the first year when the entire project was in operation. The average annual benefits are as follows:

Benefits	Amounts (1 July 1968)
Navigation	$40,470,000
Power	14,838,900
Channel Stabilization	6,575,000
Flood Control	6,602,600
Water Supply	828,900
Fish and Wildlife	312,000
Recreation	2,297,000
Area Redevelopment	3,355,800
Total	$75,280,200

FISCAL YEAR 1987: The requested amount will be applied as follows:

Initiate rock removal Pool No. 7	$1,164,000
Complete miscellaneous minor items	29,000
Engineering and Design	579,000
Supervision and Administration	228,000
Total	$2,000,000

The funds requested above are required to continue construction and meet the scheduled completion date.

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NON-FEDERAL COSTS: Local interests are required to provide adequate terminal and transfer facilities for navigation and bear the increased cost of maintenance and operation of all altered rail and highway routes, including bridges and appurtenances and utilities and other existing improvements, other than federally owned.

STATUS OF LOCAL COOPERATION: Prior to authorization of the project, local interests furnished written assurances that they would construct suitable public terminals. Current assurances relative to providing port facilities have been received from the Governors of Arkansas and Oklahoma; the cities of Fort Smith, Dardanelle, Little Rock, and North Little Rock, Arkansas, and Tulsa and Muskogee, Oklahoma. The requirements relative to increased cost of maintenance and operation of altered facilities apply to the owners of these facilities and have been covered during negotiations of relocations contracts for the alteration of the various facilities.

Laws enacted in 1959 by the States of Arkansas and Oklahoma authorized the organization and operation of port authorities and permitted political subdivisions to engage in port activities. Port authorities have been organized to develop facilities in Oklahoma for the Tulsa-Rogers counties and the city of Muskogee. The Tulsa-Rogers County Port and the Muskogee Port are in operation.

In the State of Arkansas, port authorities have been organizaed to develop public port and harbor facilities at Fort Smith, Van Buren, Clarksville, Dardanelle-Russellville, Morrilton, Little Rock, North Little Rock, Ozark, and Pine Bluff-Jefferson County Area. The Clarksville Port Authority has acquired a 28-acre tract of land for the development of its port facility. The Fort Smith, Little Rock, and Pine Bluff-Jefferson County Ports are in operation.

In addition to the public ports discussed above, 35 companies are developing private port facilities along the navigation route in the State of Arkansas.

There are no other cost sharing or repayment requirements applicable to the project.

COMPARISON OF FEDERAL (CORPS OF ENGINEERS) COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $545,590,000 is a decrease of $2,838,000 from the latest estimate ($548,428,000) submitted to Congress. This change includes an increase of $94,000 for lands and damages based on cost to date and additional land requirements in Pool 13, $103,000 for completed work items, and $307,000 for Engineering and Design and Supervision and Administration based on reanalysis of requirements. These increases were more than offset by a decrease of $3,106,000 due to more detailed design of rock excavation in Pool No 7 and $236,000 for adjustments in the estimated inflation allowance through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The overall project is essentially complete and in operation. The final Operating and Maintenance Environmental Impact Statement for the McClellan-Kerr Arkansas River Navigation System in the Little Rock District was filed with the Council on Environmental Quality on 6 March 1975. The final Environmental Impact Statement for Tulsa District was filed with the Council on Environmental Quality on 28 July 1975.

For the relocation of Conway Water Supply, provisions of Section 404 of the Clean Water Act have been met with the submission of an Environmental Impact Statement, including a Section 404(b)(1) Evaluation, to Congress 12 July 1979, and Congress subsequently appropriated funds for construction in FY 1980.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1949 and for construction in FY 1963.

In the last few years, the low water level in the Mississippi River has caused delays in navigation on the White River portion of the system. The Waterways Experiment Station is performing a model study to determine if any modifications can be made in the Entrance Channel to improve navigation. The model study is scheduled for completion in August 1986. Should the study indicate modifications to the entrance channel are feasible and would improve navigation, studies leading to a general design memorandum will be initiated.

A new channel is developing between the Arkansas and White Rivers. Should this new channel develop, the sand-laden flows from the Arkansas could be carried to the White. This sediment would have to be dredged out of the White River at a cost of approximately $2,000,000 annually. Reconnaissance studies to determine the most feasible solution to this problem are scheduled for completion in August 1986.

The barges that clogged the Dam No. 2 gates during the December 1982 flood revealed that with a certain set of circumstances the structure could fail. This condition exists primarily because the structure was constructed on piling and designed for all of the gates to operate in unison. In December 1982 the higher than normal head at this Dam combined with the clogged gates resulted in high current velocity that caused both upstream and downstream scouring. A model study is underway by the Waterways Experiment Station to determine the most feasible solution to this problem. The study is scheduled for completion in March 1986.

Because of commercial and Government navigation development in the floodway, a standard project flood could result in a water elevation at the top of the floodwall and levee. To provide sufficient freeboard, the North Little Rock Floodwall and Levee would be raised. Studies on raising the existing floodwall and levee are continuing.

Pending completion of detailed engineering studies, the cost of construction of four of these items have not been included in the project cost estimate. The preliminary estimated construction cost for three of these items are: Meander Cutoff, $1,100,000; Dam No. 2 modification, $7,500,000; and raise North Little Rock Floodwall and Levee, $1,000,000. The engineering solution to the Entrance Channel is unknown pending completion of the WES model study.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Tulsa and Little Rock

Project: McClellan-Kerr Arkansas River Navigation System, Locks and Dams, Arkansas and Oklahoma

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	$449,000 (Jul 61)		$548,428 1/		$545,590 1/2/
Reason for Change		(99,428)1/		(-2,838) 2/	
a. Price Escalation		25,587		-236	
b. Design Changes		42,311		-3,106 3/	
c. Additional Function Added Under General Authorization		187		0	
d. Authorized Modification		26,651		0	
e. Post-Contract Award and other Estimating Adjustments		-13,929		410 4/	
f. Schedule Changes		0		0	
g. Sundry		12,536		0	
h. Real Estate		6,085		94	

1/ Includes an allowance for estimated inflation during the construction period.
2/ Includes a decrease of $236 for adjustments in estimated inflation allowance through the construction period.
3/ More detailed design on the construction contract to remove rock from the natural navigation alignment in Pool No. 7
4/ Includes increases of $103 for actual cost on completed work and $307 for Engineering and Design and Supervision and Administration based on reanalysis of requirements.

REPORTS CONTROL SYMBOL:

APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION:

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	LANDS AND DAMAGES	20,375,000	19,538,000	323,000	0	514,000
2	RELOCATIONS	115,856,000	116,366,000	-510,000	0	0
3	RESERVOIR	1,218,000	1,218,000	0	0	0
4	DAM	106,214,000	106,242,000	-51,000	23,000	0
5	LOCK	144,742,000	144,736,000	0	6,000	0
6	FISH AND WILDLIFE FACILITIES	1,340,000	595,000	745,000	0	0
7	ROADS	2,447,000	2,447,000	0	0	0
8	CHANNELS AND CANALS	56,634,000	52,820,000	0	1,164,000	2,650,000
9	LEEVEES AND FLOODWALLS	109,000	109,000	0	0	0
10	RECREATION FACILITIES	19,619,000	19,619,000	0	0	0
11	BANK STABILIZATION	1,743,000	1,743,000	0	0	0
12	BUILDINGS, GROUNDS, AND UTILITIES	6,262,000	6,416,000	-154,000	0	0
13	PERMANENT OPERATING EQUIPMENT	6,825,000	6,829,000	-4,000	0	0
14	ENGINEERING AND DESIGN	35,635,000	34,271,000	707,000	579,000	78,000
15	SUPERVISION AND ADMINISTRATION	26,571,000	25,919,000	242,000	228,000	182,000
16						
17	TOTAL APPLIED COST (C of E Funds Only)	545,590,000	538,868,000	1,298,000	2,000,000	3,424,000
18	Undistributed Costs None					
19	TOTAL PROJECT COST (C of E Funds Only)	545,590,000	538,868,000	1,298,000	2,000,000	3,424,000
20	Pending Adjustments None					
21	TOTAL COST (C of E Funds Only)	545,590,000	538,868,000	1,298,000	2,000,000	3,424,000
22	Undelivered Orders		518,000	-518,000		
23	TOTAL OBLIGATIONS		539,386,000	780,000	2,000,000	3,424,000
24						
25	METHOD OF FINANCING			(1)		
26	Allocations		539,766,000	400,000		
27	Unobligated Carryover from Prior Yr.			380,000		
28	Total Funds Available for Obligation			780,000		
29	Appropriations Required				2,000,000	3,424,000
30						
31						
32	(1) Reflects 600,000 reduction assigned as savings and slippage.					
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 Jan 86	SOUTHWESTERN DISTRICT TULSA & LITTLE ROCK	ARKANSAS-WHITE-RED BASIN VERDIGRIS-NEOSHO AND LOWER ARKANSAS	MCCLELLAN-KERR ARKANSAS RIVER NAVIGATION SYSTEM, LOCKS AND DAMS, AR AND OK

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Fourche Bayou in the Vicinity of Little Rock, Arkansas (New Start)

LOCATION: The Fourche Bayou Basin is located in Pulaski and Saline Counties in Arkansas, and bisects the city of Little Rock.

AUTHORIZATION: Not authorized; implementation is contingent upon Congressional authorization of construction in accordance with legislation pending before Congress by the Department of the Army.

BENEFIT-COST RATIO: The benefit-to-cost ratio is 2.1 to 1 at 8 5/8 percent. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

		Accum % Of Est. Fed Cost
Estimated Federal Cost	$18,260,000	
Estimated Non-Federal Cost	11,340,000	
Cash Contribution $1,450,000		
Other 9,890,000		
Total Estimated Project Cost	$29,600,000	
Allocations to 30 September 1985	0	
Conference Allowance for FY 1986	314,000	
Allocation for FY 1986	314,000 1/	
Allocation to Date	314,000	2
Allocation Requested for FY 1987	760,000	6
Schedule Balance to Complete after FY 1987	17,186,000	
Unschedule Balance to Complete after FY 1987	0	

STATUS: (1 JANUARY 1986)

Feature	Percent Complete	Completion Schedule
Entire Project	Not started	Jun 1990
Relocations	0	Jun 1990
Channels	0	Jun 1990
Recreation Facilities	0	Jun 1990

1/ Allocation of funds is for completion of Continuation of Planning and Engineering.

PHYSICAL DATA

The proposed plan of improvements included 4.6 miles of channel clearing and alteration of six bridges on Fourche Creek; 5.8 miles of channel clearing and alteration of six bridges on Rock Creek; 1.5 miles of channel clearing and alteration of two bridges on Grassy Flat Creek. In addition, the proposed plan of improvement includes the acquisition of 250 acres of rights-of-way.

DIVISION: Southwestern

DISTRICT: Little Rock

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REGION: Arkansas-White-Red
Fourche Bayou,
Little Rock, AR

JUSTIFICATION: The proposed plan will protect the City of Little Rock, Arkansas, from the majority of flood flows in the Fourche Bayou Watershed. The area protected is highly urbanized and is experiencing disastrous floods almost annually for the past several years. The flood of September 1978 was the most catastrophic on record with a loss of eight lives, and $17,200,000 ($25,875,000 1985 prices) in damages. An Interstate Highway was topped, a major discount center had 4 feet of water inside, and several hundred homes had from 1 to 6 feet of water. Two floods occurred in 1981 along Rock Creek. An area that had 6 feet in 1978 has had 1 to 2 feet on both occasions in 1981. Over $10,700,000 ($16,096,000 1985 prices) in damages could have been prevented if the project had been in place in 1978. Estimated annual benefits are as follows:

Benefits	Amounts (1 October 1985)
Flood Damage Prevention	$5,542,000
Recreation	149,000
Total	$5,691,000

FISCAL YEAR 1987: The requested amount will be applied as follows:

Initiate construction of channel improvements	$180,000
Engineering and Design	380,000
Supervision and Administration	200,000
Total	$760,000

The funds requested above are required to initiate construction.

NON-FEDERAL COSTS: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interest will be required to provide all lands, easements, and rights-of-way, presently estimated at $1,698,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $7,890,000; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $302,000, and bear all costs of operation, maintenance and replacement of recreation facilities presently estimated at $14,000 annually; and pay five percent of the costs allocated to flood control, presently estimated at $1,450,000, and bear all costs of operation, maintenance and replacement of flood control facilities presently estimated at $52,000 annually. Local interest have also agreed to make all required payments and voluntary contributions concurrently with project construction.

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STATUS OF LOCAL COOPERATION: The local sponsors, City of Little Rock, and County of Pulaski, have signed letters of assurances dated 21 October 1985 (City) and 21 October 1985 (County) to participate in project construction in accordance with above requirements. The State of Arkansas Soil and Water Conservation Commission signed an assurance dated 16 June 1982. The City of Little Rock is accumulating a portion of a recently passed one cent local sales tax to apply toward its share of the local cost.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $18,260,000 is an initial estimate and has not been previously presented to Congress. This estimate includes $1,270,000 for estimated inflation allowance from 1 October 1985 through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: Final Environmental Impact Statement was transmitted to Environmental Protection Agency on 12 March 1981. The Environmental Impact Statement will be revised and updated if necessary in the General Design Memorandum phase.

The provisions of Section 404 of the Clean Water Act has been met with the submission of Environmental Impact Statement including a Section 404 (b) (1) Evaluation to Congress on 12 March 1981 and will require a subsequent appropriation or authorization action of this project by Congress.

OTHER INFORMATION: Continuation of Planning and Engineering will be completed in Fiscal Year 1986. The General Design Memorandum is nearing completion. Studies to date indicate that the National Economic Development plan would include work along 0.8 mile of Rock and Grassy Flat Creek, and 4.9 miles of Fourche Creek and has a benefit-to-cost ratio of 1.25 at 8 3/8% interest rate. The total cost of this plan would be about $31,300,000 of which the Non-Federal share is $16,600,000.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Little Rock

Project: Fourche Bayou in the Vicintiy of Little Rock, Arkansas

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	$18,260 1/ (Oct 85)		Not Applicable		$18,260 1/

Reason for Change

a. Price Escalation
b. Design Changes
c. Additional Function Added Under General Authorization
d. Authorized Modification
e. Post-Contract Award and other Estimating Adjustments
f. Schedule Changes
g. Sundry
h. Real Estate

1/ Includes $1,270 for estimated inflation allowance from 1 October 1985 through the construction period.

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REPORTS CONTROL SYMBOL:

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	LANDS AND DAMAGES	1,446,000	0	0	800,000	646,000
2	RELOCATIONS	10,720,000	0	0	0	10,720,000
3	CHANNELS AND CANALS	12,302,000	0	0	200,000	12,102,000
4	RECREATION FACILITIES	506,000	0	0	0	506,000
5	ENGINEERING AND DESIGN	2,237,000	0	236,000	680,000	1,321,000
6	SUPERVISION AND ADMINISTRATION	2,389,000	0	78,000	230,000	2,081,000
7	TOTAL COST (FED AND NON-FED FUNDS)	29,600,000	0	314,000	1,910,000	27,376,000
8						
9	FEDERAL COST					
10	RELOCATIONS	4,001,000	0	0	0	4,001,000
11	CHANNELS AND CANALS	10,852,000	0	0	180,000	10,672,000
12	RECREATION FACILITIES	253,000	0	0	0	253,000
13	ENGINEERING AND DESIGN	1,489,000	0	236,000	380,000	873,000
14	SUPERVISION AND ADMINISTRATION	1,665,000	0	78,000	200,000	1,387,000
15	TOTAL FEDERAL COST	18,260,000	0	314,000	760,000	17,186,000
16						
17	NON-FEDERAL COST					
18	LANDS AND DAMAGES	1,446,000	0	0	800,000	646,000
19	RELOCATIONS	6,719,000	0	0	0	6,719,000
20	CHANNELS AND CANALS (CASH CONTRIBUTION)	1,450,000	0	0	20,000	1,430,000
21	RECREATION FACILITIES	253,000	0	0	0	253,000
22	ENGINEERING AND DESIGN	748,000	0	0	300,000	448,000
23	SUPERVISION AND ADMINISTRATION	724,000	0	0	30,000	694,000
24	TOTAL NON-FEDERAL COST	11,340,000	0	0	1,150,000	10,190,000
25						
26	METHOD OF FINANCING					
27	Allocations					
28	Unobligated Carryover for Obligations					
29	TOTAL FUNDS AVAILABLE FOR OBLIGATIONS					
30	APPROPRIATIONS REQUIRED			314,000	760,000	17,186,000
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 Jan 86	SOUTHWESTERN	ARKANSAS-WHITE-RED	FOURCHE BAYOU IN THE VICINITY OF LITTLE ROCK, ARKANSAS
	DISTRICT LITTLE ROCK	BASIN LOWER ARKANSAS RIVER	

ENG FORM 1 SEP 78 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986 640

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REPORTS CONTROL SYMBOL:

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	NON-FEDERAL COSTS					
2	CASH CONTRIBUTIONS	(1,450,000)	0	0	(20,000)	(1,430,000)
3	OTHER COSTS	(9,890,000)	0	0	(1,130,000)	(8,760,000)
4	LANDS AND DAMAGES	1,446,000	0	0	800,000	646,000
5	RELOCATIONS	6,719,000	0	0	0	6,719,000
6	RECREATION FACILITIES	253,000	0	0	0	253,000
7	ENGINEERING AND DESIGN	748,000	0	0	300,000	448,000
8	SUPERVISION AND ADMINISTRATION	724,000	0	0	30,000	694,000
9	TOTAL NON-FEDERAL COSTS	11,340,000	0	0	1,150,000	10,190,000
10						
11	TOTAL PROJECT COSTS					
12						
13	FEDERAL AND NON-FEDERAL COSTS	29,600,000	0	314,000	1,916,000	27,376,000
14						
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33						

EFFECTIVE DATE: 1 Jan 86

DIVISION: SOUTHWESTERN

DISTRICT: LITTLE ROCK

REGION: ARKANSAS-WHITE-RED

BASIN: LOWER ARKANSAS RIVER

PROJECT: FOURCHE BAYOU IN THE VICINITY OF LITTLE ROCK, ARKANSAS

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Flood Control (Local Protection)

PROJECT: Great Bend, Kansas (New Start)

LOCATION: The project is located in Barton County, Kansas, on the north bank of the Arkansas River about 4-1/2 miles above its confluence with Walnut Creek.

AUTHORIZATION: Flood Control Act of 1965.

BENEFIT-COST RATIO: The benefit-cost ratio is 6.0 to 1 at 3 1/4 percent. The benefit-cost ratio is based on the project functioning with the Soil Conservation Service work plan for flood protection above the confluence of the Arkansas River with Walnut Creek.

SUMMARIZED FINANCIAL DATA

			Accum % of Est Fed Cost
Estimated Federal Cost		$43,535,000	
Estimated Non-Federal Cost:		15,765,000	
Cash Contribution	$ 2,965,000		
Other Costs	12,800,000		
Total Estimated Project Cost		$59,300,000	
Allocations to 30 September 1985		1,584,000	
Conference Allowance for FY 1986		500,000	
Allocation for FY 1986		500,000	
Allocations to Date		2,084,000	5
Allocation Requested for FY 1987		2,600,000	11
Scheduled Balance to Complete after FY 1987		38,851,000	
Unscheduled Balance to Complete after FY 1987		0	

STATUS: (1 January 1986)

	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	0	Sep 1991
Relocations	0	Dec 1989
Channels	0	Sep 1991
Levees	0	Sep 1991

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Division: Southwestern District: Tulsa

4 FEB 1986 642

Region: Arkansas-White-Red
Great Bend, Kansas

PHYSICAL DATA

Channels: Type -Grass Lined
Length - 8.6 miles (new)
6.0 miles (modification)
Width - 100-400 feet

Levees: Earthern - 24.5 miles

Relocations:

Roads and Bridges	($ 290,000)
Railroads	($5,776,000)
Utilities	($ 36,000)

JUSTIFICATION: The project will provide standard project flood protection for about 24,950 acres of urban and suburban lands, irrigated lands, highways and railroads, commercial, industrial, and residential structures at, and in the vicinity of, Great Bend, Kansas, with an estimated property value of about $561,000,000. Reliable records show 13 major floods occurred in the area between 1921 and 1981. The flood of record occurred on the Arkansas River in May 1942 and caused damages estimated at $213,800. Assuming current prices (October 1985), the estimated damages would be $8,300,000. The most recent Arkansas River flooding occurred on 14-15 June 1981. The peak flow of the June 1981 flood was 14,000 cfs and losses were estimated to be in excess of $45,000,000 ($55,600,000 at October 1985 prices). Channel capacity at Great Bend is 4,000 cfs. Flooding caused six breaks in the right bank levee from Highway 281 to several miles below the Highway 281 bridge. About 1,200 acres of cropland were flooded, 85 percent of the non-residential buildings had flood damage, 2,430 homes received slight to major damage, and approximately one-third of the population of 16,500 were evacuated. Ponding depths of up to six feet with an average of three feet are possible depending on flood magnitude. The average annual flood benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Damage Prevention	
Urban	$12,921,000
Existing	(12,884,000)
Future	(37,000)
Rural	149,000
Existing	(109,000)
Future	(40,000)
Total	$13,070,000

FISCAL YEAR 1987: The requested amount will be applied as follows:

Initiate Levees	$ 400,000
Engineering and Design	1,800,000
Supervision and Administration	400,000
Total	$2,600,000

The funds requested above are required to initiate construction.

Great Bend, Kansas

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NON-FEDERAL COST: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests are required to provide lands, easements and rights-of-way, presently estimated at $3,620,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges where necessary in the construction of the project, presently estimated at $8,070,000; and associated Engineering and Design and Supervision and Administration, presently estimated at $1,110,000. Local interests have also agreed to pay five percent of the total project cost, presently estimated at $2,965,000, concurrently with project construction, and to bear all costs of operation, maintenance, and replacements, presently estimated at $241,000 annually.

STATUS OF LOCAL COOPERATION: The City of Great Bend, Kansas, furnished a letter dated 7 October 1985, in which they agreed to participate in project construction in accordance with the above requirements.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $43,535,000 is an increase of $2,235,000 over the latest estimate ($41,300,000) submitted to Congress. This change includes increases of $1,600,000 based on higher price levels to 1 October 1985 and $3,395,000 for an estimated inflation allowance from 1 October 1985 through the construction period. The increases were partially offset by a decrease of $2,760,000 based on adjustments between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: A draft Environmental Impact Statement was filed with the Environmental Protection Agency on 19 April 1985. The final Environmental Impact Statement will be included in the General Design Memorandum, which is scheduled for approval in March 1986.

The provisions of the Clean Water Act do not apply because improvements do not involve the placement of fill material or discharge of dredged material into the waters of the United States.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1968. Preconstruction planning was halted in FY 1969 when bond elections to support the project failed. Preconstruction planning was resumed in FY 1972 and stopped in 1977 when the city stated they were unable to participate due to an unsuccessful bond election. On 6 April 1982, the city passed a $15,000,000 bond issue to provide for the required non-Federal participation, and planning was resumed with funds provided in the FY 1983 Supplemental Appropriations Act.

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Great Bend, Kansas

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Tulsa

Project: Great Bend, Kansas

Item	Estimates presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	4,030 (Oct 63)		41,300 (Oct 83)		43,535 1/ 2/
Reason for Change		(37,270)		(2,235) 1/	
a. Price Escalation		24,397		4,995	
b. Design Changes		6,485		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimating Adjustments		5,290		-2,760 3/	
f. Schedule Changes		0		0	
g. Sundry		98		0	
h. Real Estate		0		0	

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes $3,395 allowance for estimated inflation from 1 October 1985 through the construction period.
3/ Includes a decrease of $2,760 based on adjustments between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

Great Bend, Kansas

4 FEB 1986

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APPROPRIATION TITLE:
CONSTRUCTION GENERAL

CLASSIFICATION, FLOOD CONTROL (LOCAL PROTECTION)
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR 1987	BALANCE TO COMPLETE AFTER FY 1987
RELOCATIONS	6,517,000	-	-	-	6,517,000
CHANNELS AND CANALS	22,838,000	-	-	-	22,838,000
LEVEES AND FLOODWALLS	9,688,000	-	-	600,000	9,088,000
ENGINEERING AND DESIGN	4,104,000	1,257,000	411,000	1,800,000	636,000
SUPERVISION AND ADMINISTRATION	3,353,000	316,000	100,000	400,000	2,537,000
TOTAL APPLIED COST (FEDERAL FUNDS AND NON-FEDERAL CONTRIBUTIONS)	46,500,000	1,573,000	511,000	2,800,000	41,616,000
UNDISTRIBUTED COST (NONE)					
TOTAL PROJECT COST (FEDERAL FUNDS AND NON-FEDERAL CONTRIBUTIONS)	46,500,000	1,573,000	511,000	2,800,000	41,616,000
TOTAL COST (FEDERAL FUNDS AND NON-FEDERAL CONTRIBUTIONS)	46,500,000	1,573,000	511,000	2,800,000	41,616,000
UNDELIVERED ORDERS		1,000	- 1,000	-	-
TOTAL OBLIGATIONS (FEDERAL FUNDS AND NON-FEDERAL CONTRIBUTIONS)		1,574,000	510,000	2,800,000	41,616,000
FEDERAL FUNDS					
TOTAL COST	43,535,000	1,573,000	511,000	2,600,000	38,851,000
UNDELIVERED ORDERS		1,000	- 1,000	-	-
TOTAL OBLIGATIONS		1,574,000	510,000	2,600,000	38,851,000
NON-FEDERAL CONTRIBUTIONS					
TOTAL COST	15,765,000	-	500,000	5,300,000	9,965,000
UNDELIVERED ORDERS (NONE)					
TOTAL OBLIGATIONS		-	500,000	5,300,000	9,965,000

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EFFECTIVE 1 JAN 86 DIVN, SOUTHWESTERN DIST, TULSA

REGION, ARKANSAS-WHITE-RED BASIN, ARKANSAS IN KANSAS

PROJECT, GREAT BEND, KANSAS

4 FEB 1986

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APPROPRIATION TITLE:
CONSTRUCTION GENERAL

CLASSIFICATION, FLOOD CONTROL (LOCAL PROTECTION)
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR 1987	BALANCE TO COMPLETE AFTER FY 1987
METHOD OF FINANCING					
FEDERAL FUNDS					
ALLOCATIONS		1,584,000	500,000		
UNOBLIGATED CARRYOVER FROM PRIOR YEAR			10,000		
TOTAL FUNDS AVAILABLE FOR OBLIGATION			510,000		
APPROPRIATION REQUIRED				2,600,000	38,851,000
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS	2,965,000	-	-	200,000	2,765,000
OTHER COSTS					
LANDS AND DAMAGES	3,620,000	-	500,000	2,015,000	1,105,000
RELOCATIONS	8,070,000	-	-	2,625,000	5,445,000
ENGINEERING AND DESIGN	660,000	-	-	320,000	340,000
SUPERVISION AND ADMINISTRATION	450,000	-	-	140,000	310,000
TOTAL NON-FEDERAL COST	15,765,000	-	500,000	5,300,000	9,965,000

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EFFECTIVE 1 JAN 86 DIVN, SOUTHWESTERN DIST, TULSA REGION, ARKANSAS-WHITE-RED BASIN, ARKANSAS IN KANSAS PROJECT, GREAT BEND, KANSAS

4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Flood Control (Local Protection)

PROJECT: Halstead, Kansas (New Start)

LOCATION: The project is located in the City of Halstead, Harvey County, Kansas, along the Arkansas River.

AUTHORIZATION: Not authorized; implementation is contingent upon Congressional authorization of construction in accordance with the legislation pending before Congress by the Department of the Army.

BENEFIT-COST RATIO: The benefit-cost ratio is 1.8 to 1 at 8 5/8 percent. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

			Accum % of Est Fed Cost
Estimated Federal Cost		$ 5,812,000	
Estimated Non-Federal Cost:		1,938,000	
Cash Contribution	$ 1,188,000		
Other Costs	750,000		
Total Estimated Project Cost		$ 7,750,000	
Allocations to 30 September 1985		2,000	
Conference Allowance for FY 1986		0	
Allocation for FY 1986		40,000 1/	
Allocations to Date		42,000	1
Allocation Requested for FY 1987		1,100,000	20
Scheduled Balance to Complete after FY 1987		4,670,000	
Unscheduled Balance to Complete after FY 1987		0	

STATUS: (1 January 1986)

	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	0	Sep 1989
Channels	0	Sep 1989
Levees	0	Sep 1989

1/ Reflects $40,000 transfer to the project for Continuation of Planning and Engineering.

PHYSICAL DATA

Channel Modification: Grass Lined - 3.6 miles

Levees: Earthen - 4.0 miles

Division: Southwestern

District: Tulsa

4 FEB 1986

Region: Arkansas-White-Red
Halstead, Kansas

JUSTIFICATION: The project will provide protection from periodic floods which have inundated the city numerous times in past years during periods of heavy spring and summer rains and storms. The flood of record occurred in October 1973 and caused damages estimated at $1,106,000. Assuming current prices (October 1985), damages would be about $2,464,000. The last flood occurred in October 1979, and the flood crest of 22.2 feet was reported to be just a few inches less than the flood of record in 1973. The project would have prevented $4,500,000 in flood damages based on an actual flood damage survey done in November 1979 ($6,200,000 at October 1985 prices). The project will protect 650 acres of urban and 1,010 acres of agricultural lands and includes commercial, industrial, public and residential structures and contents with an estimated value of $207,400,000. Average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Damage Prevention	
Urban (Existing)	$1,167,000
Rural (Existing)	4,000
Other (Affluence-Future)	107,000
Total	$1,278,000

FISCAL YEAR 1987: The requested amount will be applied as follows:

Initiate Channels	$ 425,000
Initiate Levees	300,000
Engineering and Design	300,000
Supervision and Administration	75,000
Total	$1,100,000

The funds requested above are required to initiate construction.

NON-FEDERAL COST: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests are required to provide lands, easements and rights-of-way, presently estimated at $291,000; modify or relocate buildings, utilities, roads and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $375,000; and associated Engineering and Design and Supervision and Administration, presently estimated at $84,000. Local interests have also agreed to make a cash contribution to increase their share to 25 percent of total construction costs for flood control, presently estimated at $1,188,000, concurrently with project construction, and to bear all costs of operation, maintenance, and replacements, presently estimated at $36,000 annually.

STATUS OF LOCAL COOPERATION: The City of Halstead, Kansas, furnished a letter dated 30 September 1985, in which they agreed to participate in project construction in accordance with the above requirements.

4 FEB 1986

Halstead, Kansas 103

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COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $5,812,000 is an initial cost estimate and has not been previously presented to Congress. This estimate includes $412,000 for an estimated inflation allowance from 1 October 1985 through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 12 March 1981. Due to design changes, a Supplemental Environmental Information Report was circulated and filed with the Environmental Protection Agency on 26 April 1985.

The provisions of the Clean Water Act will be met with the submission of a Supplemental Environmental Information Report including a Section 404 (b)(1) Evaluation to Congress in the fourth quarter of Fiscal Year 1986, and will require a subsequent authorization action on this project by Congress.

OTHER INFORMATION: Funds to initiate continuation of planning and engineering were appropriated in FY 1982.

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Halstead, Kansas

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Tulsa

Project: Halstead, Kansas

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	5,812 1/ (Oct 85)		Not applicable		5,812 1/

Reason for Change

a. Price Escalation
b. Design Changes
c. Additional Function Added Under General Authorization
d. Authorized Modification
e. Post-Contract Award and other Estimating Adjustments
f. Schedule Changes
g. Sundry
h. Real Estate

1/ Includes $412 allowance for estimated inflation from 1 October 1985 through the construction period.

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APPROPRIATION TITLE:
CONSTRUCTION GENERAL

CLASSIFICATION, FLOOD CONTROL (LOCAL PROTECTION)
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR 1987	BALANCE TO COMPLETE AFTER FY 1987
LANDS AND DAMAGES	19,000	-	-	-	19,000
CHANNELS AND CANALS	3,308,000	-	-	525,0000	2,783,000
LEVEES AND FLOODWALLS	2,543,000	-	-	400,000	2,143,000
ENGINEERING AND DESIGN	762,000	-	37,000	300,000	425,000
SUPERVISION AND ADMINISTRATION	368,000	-	5,000	75,000	288,000
TOTAL APPLIED COST (FEDERAL FUNDS AND NON-FEDERAL CONTRIBUTIONS)	7,000,000	-	42,000	1,300,000	5,658,000
UNDISTRIBUTED COST (NONE)					
TOTAL PROJECT COST (FEDERAL FUNDS AND NON-FEDERAL CONTRIBUTIONS)	7,000,000	-	42,000	1,300,000	5,658,000
TOTAL COST (FEDERAL FUNDS AND NON-FEDERAL CONTRIBUTIONS)	7,000,000	-	42,000	1,300,000	5,658,000
UNDELIVERED ORDERS (NONE)					
TOTAL OBLIGATIONS (FEDERAL FUNDS AND NON-FEDERAL CONTRIBUTIONS)	7,000,000	-	42,000	1,300,000	5,658,000
FEDERAL FUNDS					
TOTAL COST	5,812,000	-	42,000	1,100,000	4,670,000
UNDELIVERED ORDERS (NONE)					
TOTAL OBLIGATIONS		-	42,000	1,100,000	4,670,000
NON-FEDERAL CONTRIBUTIONS					
TOTAL COST	1,938,000	-	-	950,000	988,000
UNDELIVERED ORDERS (NONE)					
TOTAL OBLIGATIONS		-	-	950,000	988,000

EFFECTIVE 1 JAN 86 — DIVN, SOUTHWESTERN; DIST, TULSA — REGION, ARKANSAS-WHITE-RED; BASIN, ARKANSAS IN KANSAS — PROJECT, HALSTEAD, KANSAS

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APPROPRIATION TITLE:
CONSTRUCTION GENERAL

CLASSIFICATION, FLOOD CONTROL (LOCAL PROTECTION)
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR 1987	BALANCE TO COMPLETE AFTER FY 1987
METHOD OF FINANCING					
FEDERAL FUNDS					
ALLOCATIONS		2,000	40,000 1/		
UNOBLIGATED CARRYOVER FROM PRIOR YEAR			2,000		
TOTAL FUNDS AVAILABLE FOR OBLIGATION			42,000		
APPROPRIATION REQUIRED				1,100,000	4,670,000
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS	1,188,000	-	-	200,000	988,000
OTHER COSTS					
LANDS AND DAMAGES	291,000	-	-	291,000	-
RELOCATIONS	375,000	-	-	375,000	-
ENGINEERING AND DESIGN	62,000	-	-	62,000	-
SUPERVISION AND ADMINISTRATION	22,000	-	-	22,000	-
TOTAL NON-FEDERAL COST	1,938,000	-	-	950,000	988,000

1/ Reflects $40,000 transfer to the project for Continuation of Planning and Engineering.

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EFFECTIVE 1 JAN 86 DIVN, SOUTHWESTERN DIST, TULSA REGION, ARKANSAS WHITE-RED BASIN, ARKANSAS IN KANSAS PROJECT, HALSTEAD, KANSAS

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Clear Creek, Texas (Continuing)

LOCATION: The project is located about midway between the two metropolitan centers of Houston, Texas, on the north and Galveston-Texas City on the south in Harris, Galveston, and Brazoria Counties above and below existing Clear Lake.

AUTHORIZATION: Flood Control Act of 1968 and the Supplemental Appropriations Act of 1985 (Public Law 99-88)

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 3.0 to 1 at 3 1/4 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 3.1 to 1. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Federal Cost		$ 78,141,000	
Estimated Non-Federal Cost		40,472,000	
Cash Contribution	$ 6,782,000		
Other Costs	33,690,000		
Total Estimated Project Cost		$118,613,000	
Allocations to 30 September 1985		2,851,000	
Conference Allowance for FY 1986		0	
Potential Allocation for FY 1986		1,385,000	
Potential Allocations through FY 1986		4,236,000	5
Allocation Requested for FY 1987		8,200,000	16
Scheduled Balance to Complete After FY 1987		65,705,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	Not started	Sep 1992
Channels	0	Sep 1992
Outlet	0	Sep 1988
Relocations	0	Sep 1989

PHYSICAL DATA

Channels - 22.25 miles
Outlet Structure - one
Relocations:
Railroads: Alterations to three bridges ($2,417,000)

Division: Southwestern

District: Galveston

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Region: Texas-Gulf
Clear Creek, Texas

JUSTIFICATION: The project would provide flood protection for a rapidly developing residential and commercial area, a suburb of Houston. Value of land and improvements that would be protected from the design flood is estimated at $655,313,000 based on 1985 price levels. Flooding in June 1976 caused minor damages; however, development in the area has continued and more runoff and damages would occur under current conditions. In July 1979, major flooding occurred and approximately $55,370,000 in damages were experienced based on 1985 price levels. The average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Prevention of Storm Damages	$ 7,226,800
Restoration of Land Values	547,200
Reduction in National Flood Insurance Cost	760,200
Reduction in Floodproofing Cost	780,700
Location Benefits	1,458,600
Affluence Factor	1,034,100
Total	$11,807,600

FISCAL YEAR 1987: The requested amount will be applied as follows:

Continue construction of new outlet from Clear Lake	$4,724,000
Initiate channel rectification and enlargement - Mile 3.8 to Mile 7.6	1,300,000
Relocate railroad bridge at Mile 6.79	786,000
Relocate railroad bridge at Mile 0.43	500,000
Engineering and Design	456,000
Supervision and Administration	434,000
Total	$8,200,000

The funds requested above are required to continue construction and meet the scheduled completion date.

NON-FEDERAL COST: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and material disposal areas, presently estimated at $18,290,000; modify, or relocate buildings, pipelines, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $15,400,000; make a cash contribution for mitigation measures consistent with the non-Federal share of total project costs without mitigation measures, presently estimated at $723,000; pay five percent of the total costs allocated to flood control, presently estimated at $6,059,000; and bear all costs of operation and maintenance of flood control facilities presently estimated at $457,000 annually. Local interests have also agreed to make all required payments and voluntary contributions concurrently with project construction.

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STATUS OF LOCAL COOPERATION: Sponsors, by letters of assurance, 14 November 1985 from Brazoria County Drainage District No. 4, 26 November 1985 from Galveston County, and 19 December 1985 from Harris County, agreed to provide all lands, easements, rights-of-way, disposal areas, perform all relocations except railroad bridges, and provide during the construction period a cash contribution equivalent to five percent of the total project capital cost. The Local Cooperation Agreement is scheduled to be signed by the sponsors in April 1986.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $78,141,000 is an increase of $10,941,000 over the latest estimate ($67,200,000) submitted to Congress (Fiscal Year 1985). This change includes increases of $10,564,000 for adjustments in the estimated inflation allowance through the construction period, $564,000 based on more detailed planning of construction and relocations, and $114,000 in Engineering and Design and in Supervision and Administration based on a recent reanalysis of requirements. These increases were partially offset by a decrease of $301,000 for mitigation measures.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The draft Environmental Impact Statement was submitted to the Environmental Protection Agency in December 1981. The final Environmental Impact Statement was filed with the Environmental Protection Agency 13 August 1982.

The provisions of Section 404 of the Clean Water Act have been met with the submission of an Environmental Impact Statement, including a Section 404(b)(1) evaluation, a public meeting held on 26 January 1982, and a Certificaton issued by the State of Texas on 9 September 1982.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1972. Funds to initiate construction were appropriated by the FY 1985 Supplemental Appropriations Act.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Galveston

Project: Clear Creek, Texas

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	$67,200 (Oct 83)		$67,200 (Oct 83)		$78,141 1/2/
Reason for Change		(0)		($10,941) 2/	
a. Price Escalation		0		10,564	
b. Design Changes		0		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimating Adjustments		0		377 3/	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		0	

1/Includes an allowance for estimated inflation through the construction period.
2/Includes an increase of $10,564 for estimated inflation through the construction period.
3/Includes increases of $564 based on more detailed planning of construction and relocations, and $114 in Engineering and Design and in Supervision and Administration based on a recent reanalysis of requirements, and a decrease of $301 for mitigation measures.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Local Protection Project Specifically Authorized by Congress (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
Fiscal Years 1986 and 1987

ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
RELOCATIONS	2,417,000	0	0	1,410,000	1,007,000
CHANNELS	72,780,000	0	300,000	7,607,000	64,873,000
ENGINEERING AND DESIGN	4,956,000 1/	2,578,000	190,000	500,000	1,688,000
SUPERVISION AND ADMINISTRATION	4,770,000	250,000	60,000	481,000	3,979,000
TOTAL APPLIED COST (Federal Funds and Non-Federal Contributions)	84,923,000	2,828,000	550,000	9,998,000	71,547,000
Undistributed Cost (None)					
TOTAL PROJECT COST (Federal Funds and Non-Federal Contributions)	84,923,000	2,828,000	550,000	9,998,000	71,547,000
Pending Adjustments (None)					
TOTAL COST (Federal Funds and Non-Federal Contributions)	84,923,000	2,828,000	550,000	9,998,000	71,547,000
Undelivered Orders			+1,008,000	-1,008,000	
TOTAL OBLIGATIONS		2,828,000	1,558,000	8,990,000	71,547,000
FEDERAL FUNDS					
TOTAL COST	78,141,000	2,828,000	400,000	9,208,000	65,705,000
Undelivered Orders			+1,008,000	-1,008,000	
TOTAL OBLIGATIONS		2,828,000	1,408,000	8,200,000	65,705,000
NON-FEDERAL CONTRIBUTIONS					
TOTAL COST - CASH	6,782,000	0	150,000	790,000	5,842,000
Undelivered Orders (None)					
TOTAL OBLIGATIONS		0	150,000	790,000	5,842,000

1/ E&D estimate includes 96,000 for RE activities (deed and title checks, gross appraisals, and field inspections).

EFFECTIVE DATE
1 JANUARY 1986

DIVISION: SOUTHWESTERN
DISTRICT: GALVESTON

REGION: TEXAS-GULF
BASIN: TRINITY-GALVESTON BAY

PROJECT: CLEAR CREEK, TEXAS

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Local Protection Project Specifically Authorized by Congress (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
Fiscal Years 1986 and 1987

ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
METHOD OF FINANCING					
FEDERAL FUNDS					
Allocations		2,851,000	1,385,000 1/		
Unobligated Carryover from Prior Year			23,000		
Total Funds Available for Obligation			1,408,000		
Appropriation Required				8,200,000	65,705,000
NON-FEDERAL CONTRIBUTIONS - CASH		0	150,000		
Unobligated Carryover from Prior Year			0		
Total Funds Available for Obligation			150,000		
Contributions Required				790,000	5,842,000
NON-FEDERAL COSTS					
Cash Contributions	6,782,000	0	150,000	790,000	5,842,000
Other Costs	33,690,000	0	13,872,000	11,200,000	8,618,000
Lands and Damages	(18,290,000)	(0)	(12,172,000)	(2,700,000)	(3,418,000)
Relocations	(15,400,000)	(0)	(1,700,000)	(8,500,000)	(5,200,000)
TOTAL NON-FEDERAL COSTS	40,472,000	0	14,022,000	11,990,000	14,460,000
TOTAL PROJECT COSTS					
Federal (Corps) Costs & Non-Federal Costs	118,613,000	2,828,000	14,422,000	21,198,000	80,165,000

1/Reflects 1,385,000 potential allocation for FY 1986.

EFFECTIVE DATE 1 JANUARY 1986 DIVISION: SOUTHWESTERN DISTRICT: GALVESTON REGION: TEXAS-GULF BASIN: TRINITY-GALVESTON BAY PROJECT: CLEAR CREEK, TEXAS

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Colorado River and Tributaries, Boggy Creek at Austin, Texas (Continuing)

LOCATION: The project is located in the City of Austin along Boggy Creek, Travis County, Texas.

AUTHORIZATION: Supplemental Appropriations Act of 1985(Public Law 99-88)

BENFFIT-COST RATIO: The remaining benefit-remaining cost ratio is 1.6 to 1 at 8 1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985 Supplemental) was 1.08 to 1. The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum % of Est Fed Cost
Estimated Federal Cost		$ 15,800,000	
Estimated Non-Federal Cost		10,200,000	
Cash Contribution	$ 1,553,000		
Other	8,647,000		
Total Estimated Project Cost		$ 26,000,000	
Allocations to 30 September 1985		5,000	
Conference Allowance for FY 1986		0	
Potential Allocation for FY 1986		295,000	
Potential Allocations through FY 1986		300,000	2
Allocations Requested for FY 1987		900,000	8
Scheduled Balance to Complete After FY 1987		14,600,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	0	Mar 1990
Relocations-Railroad Bridge	0	Sep 1989
Channels	0	Mar 1990
Recreation Facilities	0	Mar 1990

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Division: Southwestern

District: Fort Worth

Region: Lower Red
Colorado River and Tributaries,
Boggy Creek at Austin, Texas

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PHYSICAL DATA

Relocations:
Railroad bridges (657,000)

Channels:
The improvement consists of 1.1 miles of grass lined channel and 1.7 miles of paved channel. Where Fort Branch and Tannehill Branch flow into the improved channel, the main channel will be lined with gabions.

JUSTIFICATION: The Boggy Creek watershed has a history of severe flooding, primarily caused by intense local thunderstorms. There are over twenty-two hundred structures in the 1,570-acre Standard Project Flood flood plain of the main stem Boggy Creek. About 2,070 or 95 percent of the structures are single-story wood homes. There are about 90 commercial/industrial and 14 structures in the flood plain. The estimated value of existing investments within the flood plain is $142,000,000 at October 1985 price levels. On 28-29 October 1960, more than seven inches of rain fell in 12 hours resulting in a city wide flood with Boggy Creek watershed experiencing the greatest damage causing more than 200 basin residents to evacuate their homes. Twelve homes were destroyed by the flood waters. The total damages caused by the maximum known flood were $2,500,000 and recurrence of this flood using October 1985 price levels and 1982 conditions of development would cause $12,500,000 in damages. Since the October 1960 storm, flooding has occurred in June 1964, May 1965, August 1966, September and October 1973, May 1975, May and July 1979. The project will provide a 100-year flood protection within the Boggy Creek watershed and satisfy recreation needs of 62,000 user-days annually. Estimated average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$ 2,714,000
Recreation	112,000
Total	$ 2,826,000

FISCAL YEAR 1987: The requested amount will be applied as follows:

Initiate Land Acquisition	54,000
Initiate Channel Improvement Part I	297,000
Initiate and Complete Cultural Resource Mitigation	14,000
Engineering and Design	478,000
Supervision and Administration	57,000
Total	$ 900,000

The funds requested above are needed to continue construction and meet the scheduled completion date.

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NON-FEDERAL COST: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority leadership, local interests are required to provide lands, easements, rights-of-way, and material disposal areas, presently estimated at $4,511,000; relocate roads and utilities except railroad bridges, where necessary in the construction of the project presently estimated at $4,065,000; pay one-half of the separable cost allocated to recreation, presently estimated at $300,000; and bear all costs of operation, maintenance, and replacement of recreation facilities, presently estimated at $39,000 annually; pay five percent of cost allocated to flood control, presently estimated at $1,242,000; and bear all cost of operation, maintenance, and replacement of flood control facilities presently estimated at $41,000 annually; pay 33-1/3 percent of the separable cost allocated to fish and wildlife enhancement, presently estimated at $71,000; bear all cost of operation, maintenance, and replacement of fish and wildlife facilities presently estimated at $4,000; and pay 39 percent of the cultural resource preservation, currently estimated at $11,000. Local interests have also agreed to make all required payments and voluntary contributions concurrently with project construction.

STATUS OF LOCAL COOPERATION: The City of Austin, Texas is responsible for local cooperation and signed a draft letter of intent dated 3 September 1985. The city has initiated land acquisition and through 30 September 1985 completed two of the five bridges to be constructed. The City of Austin's relocation of bridges and utilities will provide for a 100-year flood protection in accordance with the General Design Memorandum Phase II dated October 1984. The Local Cooperation Agreement is scheduled to be signed by the City in June 1986.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $15,800,000 is an increase of $2,800,000 from the latest estimate ($13,000,000) submitted to Congress. This change includes increases of $1,222,000 for an estimated inflation allowance from 1 October 1985 through the construction period and $1,736,000 based on more detailed planning of construction and relocation. These increases were partially offset by a decrease of $158,000 for Engineering and Design and Supervision and Administration based on a recent reanalysis of requirements.

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STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Environmental Protection Agency 30 June 1980.

The provisions of Section 404 of the Clean Water Act have been met by the previous issuance of a nationwide permit number 26 which covers this project. This permit was issued on 19 July 1977 and provides for dredge and fill above the headwaters of the United States. The Record of Decision was signed by the Chief of Engineers on 19 January 1981, completing the National Environmental Policy Act requirements.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in Fiscal Year 1982 and for construction in the Fiscal Year 1985 Supplemental Appropriations Bill.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Fort Worth

Project: Colorado River and Tributaries, Boggy Creek at Austin, Texas

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	13,000 (Oct 83)		13,000		15,800 1/
Reason for Change		(0)		(2,800) 1/	
a. Price Escalation		0		1,200	
b. Design Changes		0		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimating Adjustments		0		1,578 2/	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		22	

1/ Includes an increase of $1,222 for adjustments in the inflation allowance through the construction period.
2/ Includes increases of $1,736 based on more detailed planning of construction and relocations, partially offset by a decrease of $158 for Engineering and Design and Supervision and Administration based on a recent reanalysis of requirements.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION-GENERAL

CLASSIFICATION: LOCAL PROTECTION PROJECTS (SC)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO.	ITEM (a)	PROJECT COST ESTIMATE (b)	TOTAL TO 30 SEP 19 85 (c)	CURRENT FY 1986 (d)	BUDGET FY 19 87 (e)	BALANCE TO COMPLETE AFTER FY 19 87 (f)
1						
2	LANDS AND DAMAGES	326,000	-	-	60,000	266,000
3	RELOCATIONS	657,000	-	-	-	657,000
4	CHANNELS	13,939,000	-	-	329,000	13,610,000
5	RECREATION FACILITIES	534,000	-	-	-	534,000
6	CULTURAL RESOURCE PRESERVATION	16,000	-	-	16,000	-
7	ENGINEERING AND DESIGN	842,000	-	270,000	532,000	40,000
8	SUPERVISION AND ADMINISTRATION	1,039,000	-	30,000	63,000	946,000
9						
10	TOTAL APPLIED COST (Federal Funds	17,353,000	-	300,000	1,000,000	16,053,000
11	and Non-Federal Contributions)					
12	UNDISTRIBUTED COST (None)					
13	TOTAL PROJECT COST (Federal Funds	17,353,000	-	300,000	1,000,000	16,053,000
14	and Non-Federal Contributions)					
15	TOTAL COST (Federal Funds	17,353,000	-	300,000	1,000,000	16,053,000
16	and Non-Federal Contributions)			-		
17	UNDELIVERED ORDERS		-	300,000	1,000,000	16,053,000
18	TOTAL OBLIGATIONS					
19						
20	FEDERAL FUNDS					
21	TOTAL APPLIED COST	15,800,000	-	300,000	900,000	14,600,000
22	Undistributed Cost (None)					
23	TOTAL PROJECT COST	15,800,000	-	300,000	900,000	14,600,000
24	Pending Adjustments (None)					
25	TOTAL COST	15,800,000	-	300,000	900,000	14,600,000
26	Undelivered Orders (None)					
27	TOTAL OBLIGATIONS		-	300,000	900,000	14,600,000
28						
29						
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 January 1986	Southwestern	Lower Colorado	COLORADO RIVER AND TRIBUTARIES, BOGGY CREEK AT AUSTIN, TEXAS
	DISTRICT Fort Worth, Texas	BASIN Colorado River	

ENG FORM 1 SEP 78 2700 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION PROJECTS (FC)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LN NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 1986	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1						
2	NON-FEDERAL CONTRIBUTIONS					
3	TOTAL APPLIED COST	1,553,000	-	-	100,000	1,453,000
4	Undistributed Cost (None)					
5	TOTAL PROJECT COST	1,553,000	-	-	100,000	1,453,000
6	Pending Adjustments (None)					
7	TOTAL COST	1,553,000	-	-	100,000	1,453,000
8	Undelivered Orders (None)					
9	TOTAL OBLIGATIONS		-	-	100,000	1,453,000
10						
11	METHOD OF FINANCING:					
12	FEDERAL FUNDS					
13	ALLOCATIONS		5,000	295,000 1/		
14	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			5,000		
15	TOTAL FUNDS AVAILABLE FOR OBLIGATIONS			300,000		
16	APPROPRIATIONS REQUIRED				900,000	14,600,000
17	1/ Reflects $295,000 potential allocation for FY 1986.					
18						
19	NON-FEDERAL CONTRIBUTIONS					
20	CONTRIBUTIONS	-	-			
21	UNOBLIGATED CARRYOVER FROM PRIOR YEAR		-	-		
22	TOTAL FUNDS AVAILABLE FOR OBLIGATION		-	-		
23	CONTRIBUTIONS REQUIRED				100,000	1,453,000
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						

EFFECTIVE DATE: 1 January 1986

DIVISION: Southwestern

DISTRICT: Fort Worth, Texas

REGION: Lower Colorado

BASIN: Colorado River

PROJECT: COLORADO RIVER AND TRIBUTARIES, BOGGY CREEK AT AUSTIN, TEXAS

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION PROJECTS (FC)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1						
2	NON-FEDERAL COST					
3	CASH CONTRIBUTIONS	1,553,000	-	-	100,000	1,453,000
4	OTHER COST	8,647,000	1,285,000	2,417,000	4,945,000	-
5						
6	(LANDS AND DAMAGES)	(4,536,000)	(362,000)	(1,000,000)	(3,174,000)	(-)
7	(RELOCATIONS)	(3,611,000)	(854,000)	(1,100,000)	(1,657,000)	(-)
8	(ENGINEERING AND DESIGN)	(201,000)	(51,000)	(146,000)	(10,000)	(-)
9	(SUPERVISION AND ADMINISTRATION)	(299,000)	(18,000)	(177,000)	(104,000)	(-)
10						
11	TOTAL NON-FEDERAL COST	10,200,000	1,285,000	2,417,000	5,045,000	1,453,000
12						
13	TOTAL PROJECT COST FEDERAL (CORPS) COST					
14	AND NON-FEDERAL COST	26,000,000	1,285,000	2,717,000	5,945,000	16,053,000
15						
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EFFECTIVE DATE: 1 January 1986

DIVISION: Southwestern

DISTRICT: Fort Worth, Texas

REGION: Lower Colorado

BASIN: Colorado River

PROJECT: COLORADO RIVER AND TRIBUTARIES, BOGGY CREEK AT AUSTIN, TEXAS

ENG FORM 2700 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: El Paso, Texas (Continuing)

LOCATION: The project is at El Paso, El Paso County, Texas, on the left bank of the Rio Grande in the reach that forms part of the international boundary between the United States and the Republic of Mexico.

AUTHORIZATION: Flood Control Act of 1965.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 4.2 to 1 at 3-1/4 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1970) was 1.5 to 1. The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

		Accum % of Est Fed Cost
Estimated Federal Cost	$ 72,700,000	
Estimated Non-Federal Cost	31,900,000	
Cash Contribution 0		
Other Costs 31,900,000		
Total Estimated Project Cost	$104,600,000	
Allocations to 30 September 1985	54,479,000	
Conference Allowance for FY 1986	3,700,000	
Allocation for FY 1986	3,300,000 1/	
Allocations to Date	57,779,000	79
Allocation Requested for FY 1987	500,000	80
Scheduled Balance to Complete after FY 1987	11,096,000	
Unscheduled Balance to Complete after FY 1987	3,325,000	

STATUS: (1 January 1986)

	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	80	Jan 1991 2/
Central Area		
Relocations	100	Apr 1982
Dams	100	Nov 1982
Channels and Canals	99	Nov 1978
Van Buren Dam	0	Unscheduled 2/
Fillmore Dam	0	Unscheduled 2/
Modification to Range and Northgate Dams	40	May 1986
Northwest Area		
Relocations	100	Dec 1984
Dams	100	Sep 1983
Channels and Canals	94	Apr 1986
Southeast Area		
Relocations	0	Jan 1991
Dams	0	Nov 1990
Channels	0	Jan 1991
Levees	0	Jan 1990

1/ Reflects $400,000 reduction assigned as savings and slippage.

2/ See "OTHER INFORMATION"

DIVISION: Southwestern DISTRICT: Albuquerque

REGION: Rio Grande
El Paso, Texas

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PHYSICAL DATA

Central Area
Dams: 8, flood control only
Channels and Canals:
  Channels: 34,900 feet
  Conduits: 25,900 feet

Relocations:
  Railroads: $223,000
  Roads: 38,000
  Utilities: 788,000

Northwest Area
Dams: 5, flood control only
Channels and Canals:
  Channels: 21,000 feet
  Conduits: 13,700 feet

Relocation:
  Railroads: $172,000

Southeast Area
Dams: 2, flood control only
Channels and Canals:
  Channels: 48,800 feet
  Conduits: 3,800 feet

Relocation:
  Railroads: $1,127,000

JUSTIFICATION: Project provides flood protection for urban areas subject to damaging floods from arroyos on the slopes of adjacent mountains. Major damaging floods occurred in 1950, 1955, 1958, 1962, 1963, 1966, 1967, 1968, and 1974. The flood of record occurred in 1958 and caused estimated damages of $984,000. Recurrence of this flood based on October 1985 prices would cause damages estimated at $5,474,586. Standard Project Flood is the design flood. Estimated urban acres protected by the authorized project are 8,830. Value of land and improvements in the Standard Project Flood Plain is $2,075,895,000 (October 1985 prices). Average annual benefits are estimated at $10,400,000, all flood control (October 1985 prices).

FISCAL YEAR 1987: The requested amount will be applied as follows:

Engineering and Design	410,000
Supervision and Administration	90,000
TOTAL	$ 500,000

NON-FEDERAL COST: Local interests are required to furnish all lands, easements and rights-of-way, including relocations and, upon completion of construction, operate and maintain the project. The cost of the local sponsor for complying with the requirements of local cooperation is estimated to be $31,900,000 which consists of $26,104,000 for lands and damages, $4,956,000 for relocations, and $840,000 for Engineering and Design and Supervision and Administration. Annual maintenance and operation costs are presently estimated at $460,000 (October 1985 prices).

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STATUS OF LOCAL COOPERATION: The project sponsor, the City of El Paso, executed a Section 221 agreement on 31 August 1972 which was approved by the Secretary of the Army on 7 September 1972. The City of El Paso is acquiring rights-of-way for each item of construction as required. The City is currently evaluating the requirements for project lands necessary for construction in the Southeast Area.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $72,700,000 is an increase of $1,400,000 from the latest estimate ($71,300,000) submitted to Congress. This change includes increases of $444,000 due to an adjustment in the estimated inflation allowance through the construction period; $580,000 for Engineering and Design and Supervision and Administration based on reanalysis of remaining requirements; and $436,000 based on actual contract award and modifications to an existing contract. These increases were partially offset by a decrease of $60,000 based on actual contract costs.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement for the Central Area was filed with the Council on Environmental Quality in November 1970. The final Environmental Impact Statement for the Northwest Area was submitted to the Council on Environmental Quality on 7 November 1977. The Environmental Impact Statement for the Southeast Area was initiated concurrent with the General Design Memorandum studies. The final Environmental Impact Statement for the Southeast Area, including Section 404(b)(1) evaluation, will be provided to the Environmental Protection Agency in September 1986.

The provisions of Section 404 of the Clean Water Act have been met for the Oxidation Pond Dam outlet channel by a Section 404(b)(1) Evaluation, a Public Notice issued on 29 September 1977, a Certification issued by the State of Texas on 28 April 1978, and the District Engineer's signature on the Section 404 Report on 5 June 1978. The provisions of Section 404 of the Clean Water Act for the Keystone Dam Outlet have been met by a Section 404(b)(1) Evaluation Report on 2 May 1980, a Public Notice issued on 22 January 1980, a Certification from the State of Texas on 28 April 1978, and the District Engineer's signature on the Section 404 Report on 2 May 1980.

For all other construction features of the El Paso Local Protection Project, the provisions of Section 404 of the Clean Water Act have been met by the previous issuance of a Nationwide Permit which covers this project. This permit was issued on 19 July 1977 and provides for the discharge of dredge or fill materials above the headwaters.

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OTHER INFORMATION: Funds to inititate preconstruction planning were appropriated in FY 1967, and for construction in FY 1970. All planning continues to be coordinated with the International Boundary and Water Commission.

The overall project completion schedule is indefinite because Fillmore Dam in the Central Area cannot be built due to commercial quarry operations at the proposed dam site. Without a plan for the control of flows from Fillmore Canyon, the proposed modifications to the existing city-owned Van Buren Dam and the associated extension of the existing Mountain Avenue Outlet Conduit cannot be developed. Thus, the system downstream of Fillmore Canyon will be reevaluated to insure proper and safe operation of the existing Central Area projects. The reevaluation of the Central Area will also address the impact of the revised Probable Maximum Flood on the existing Pershing Dam to determine if structural modifications are necessary to provide adequate discharge capability and freeboard allowance. A supplement to the General Design Memorandum for the Central Area is scheduled to be completed in December 1986.

The original plan of improvement for the Southeast Area cannot be implemented because of extensive urban development. The authorized plan provided Standard Project Flood protection, at an estimated total first cost of (October 1985 price level) $28,795,000. The plan of improvement is being reformulated to provide Standard Project Flood protection to existing development. Although this plan may deviate from the level of protection provided by the National Economic Development Plan, it is consistent with the level of protection provided other project elements. Studies to date indicate that the total first cost of the modified Standard Project Flood protection plan would be about (October 1985 price level) $63,000,000. A General Design Memorandum for the Southeast Area is currently scheduled to be completed in November 1986 and the first construction contract is scheduled for award in Fiscal Year 1988.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Albuquerque

Project: El Paso, Texas

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Changes (4)	Current (5)
Federal Cost (Price Level)	$16,000 (Jul 68)		$71,300 1/		$72,700 1/ 2/
Reason for Change		(55,300) 1/		(1,400) 2/	
a. Price Escalation		28,728		444	
b. Design Changes		20,681		0	
c. Additional Function Added Under General Modification		649		0	
d. Authorized Modification		0		0	
e. Post-contract Award and Other Estimating Adjustments		3,184		956 3/	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		0	

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes $444 allowance for estimated inflation from 1 October 1985 through the construction period.
3/ Includes increases of $580 for Engineering and Design and Supervision and Administration based on reanalysis of remaining requirements and $436 based on actual contract award and was partially offset by a decrease of $60 based on actual contract costs.

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RCS. DAEN-CWB-13

Appropriation Title:
Construction, General

Classification:
Local Protection (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEAR 1986 - 1987

Item	Project Cost Estimate	Total To 30 Sep 1985	Current FY 1986	Budget FY 1987	Balance To Complete
CENTRAL AREA					
Relocations	1,099,000	1,099,000	0	0	0
Dams	10,000,000	5,767,000	1,125,000	0	3,108,000
Channels	8,810,000	8,709,000	0	0	101,000
Perm. Oper. Equip.	58,000	54,000	0	0	4,000
NORTHWEST AREA					
Relocations	172,000	172,000	0	0	0
Dams	10,004,000	10,004,000	0	0	0
Channels	14,012,000	12,628,000	1,384,000	0	0
Perm. Oper. Equip.	22,000	22,000		0	0
CENTRAL & NW AREAS COMBINED					
Cultural Resources Preservation	600,000	490,000	75,000	0	35,000
Engineering and Design	9,970,000	8,290,000	580,000	80,000	20,000
Supervision and Administration	5,723,000	5,476,000	170,000	20,000	57,000
SOUTHEAST AREA					
Relocations	1,127,000	0	0	0	1,127,000
Dams	2,365,000	0	0	0	2,365,000
Channels	6,095,000	0	0	0	6,095,000
Levees	578,000	0	0	0	578,000
Cultural Resources	120,000	0	0	0	120,000
Engineering and Design	1,915,000	1,000,000	335,000	330,000	280,000
Supervision and Administration	1,030,000	335,000	84,000	70,000	541,000
Total Applied Cost (Fed)	72,700,000	54,046,000	3,733,000	500,000	14,421,000
Undistributed Cost (None)					
Total Project Cost (Fed)	72,700,000	54,046,000	3,733,000	500,000	14,421,000
Pending Adjustments (None)					
Total Cost	72,700,000	54,046,000	3,733,000	500,000	14,421,000
Undelivered Orders		424,000	(424,000)		
Total Obligations		54,470,000	3,309,000		

EFFECTIVE DATE
1 January 1986

DIVISION
Southwestern

REGION
Rio Grande

PROJECT
El Paso, Texas

DISTRICT
Albuquerque

BASIN
Rio Grande

R 1 MAR 1986

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RCS: DAEN-CWB-13

Appropriation Title:
Construction, General

Classification:
Local Protection (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEAR 1986 - 1987

Item	Project Cost Estimate	Total To 30 Sep 1985	Current FY 1986	Budget FY 1987	Balance To Complete	
METHOD OF FINANCING						
FEDERAL FUNDS						
Allocations		54,479,000	3,300,000			
Unobligated Carryover			9,000			
Total Funds Available for Obligations			3,309,000			
Appropriation Required				500,000	14,421,000	
* NON-FEDERAL COSTS						
Cash Contributions	0	0	0	0	0	
Other Costs						
Lands and Damages	26,104	10,180	0	5,730	10,194	
Relocations	4,956	2,430	0	1,090	1,436	
Engineering and Design	440	154	0	95	191	
Supervision and Administration	400	13	0	85	302	
TOTAL NON-FEDERAL COST	31,900	12,777	0	7,000	12,123	*

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EFFECTIVE DATE
1 January 1986

DIVISION
Southwestern

REGION
Rio Grande

PROJECT
El Paso, Texas

DISTRICT
Albuquerque

DASIN
Rio Grande

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APPROPRIATION TITLE: Construction, General - Flood Control (Local Protection)

PROJECT: Lake Wichita, Holliday Creek, at Wichita Falls, Texas (New Start)

LOCATION: The project is located in Wichita and Archer Counties, Texas. The Lake Wichita Dam and Holliday Creek Channel are located in the city of Wichita Falls, Texas.

AUTHORIZATION: Not authorized; implementation is contingent upon Congressional authorization of construction in accordance with the legislation pending before Congress by the Department of the Army.

BENEFIT-COST RATIO: The benefit-cost ratio is 1.3 to 1 at 8 5/8 percent. The benefit-cost ratio is based on the project functioning independently. See "OTHER INFORMATION".

SUMMARIZED FINANCIAL DATA			Accum % of Est Fed Cost
Estimated Federal Cost		$30,000,000	
Estimated Non-Federal Cost:		13,100,000	
Cash Contribution	$2,000,000		
Dam Safety	2,400,000		
Other Costs	8,700,000		
Total Estimated Project Cost		$43,100,000 1/	
Allocations to 30 September 1985		0	
Conference Allowance for FY 1986		0	
Allocation for FY 1986		25,000 2/	
Allocations to Date		25,000	0
Allocation Requested for FY 1987		700,000	2
Scheduled Balance to Complete after FY 1987		29,275,000	
Unscheduled Balance to Complete after FY 1987		0	

STATUS: (1 January 1986)

	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	0	Mar 1993
Relocations	0	Dec 1988
Dams	0	Mar 1993
Channels	0	Sep 1991

1/ See "OTHER INFORMATION".
2/ Reflects $25,000 transfer to the project for Continuation of Planning and Engineering.

Division: Southwestern District: Tulsa

4 FEB 1986

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Region: Arkansas-White-Red
Lake Wichita, Holliday Creek
at Wichita Falls, Texas

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PHYSICAL DATA

Dam: Type - Earthfill
Length - 16,000 feet

Spillway: Type - Uncontrolled

Relocations: Railroads - $986,000

Channel: Width - 45-65 feet
Length - 9 miles

JUSTIFICATION: The Lake Wichita Dam has been inspected under the National Dam Safety Program and is considered safe for normal inflows, but could fail due to overtopping when subjected to the large floods the watershed is capable of producing. Such failure would result in catastrophic damages. Corrective measures to prevent dam failure are included in the recommended plan for Lake Wichita, Holliday Creek. The proposed plan would provide 100-year flood protection for approximately 1,700 acres of urban land. The plan would also eliminate the possibility of a major dam failure while maintaining a desired recreation lake. Average annual benefits for the Holliday Creek project are as follows:

Benefits	Amount (1 October 1985)
Flood Damage Prevention	
Urban	$ 4,438,000
Existing	(4,198,000)
Future	(240,000)
Other Economic Benefits	
Locational	754,000
TOTAL	$ 5,192,000

FISCAL YEAR 1987: The requested amount will be applied as follows:

Initiate Channels	$ 200,000
Engineering and Design	402,000
Supervision and Administration	98,000
TOTAL	$ 700,000

The funds requested above are required to initiate construction.

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NON-FEDERAL COST: Consistent with the cost sharing and financing concepts agreed to by the Adminstration and the Senate Majority Leadership, local interests are required to provide lands, easements and rights-of-way, presently estimated at $2,778,000, including $700,000 for dam safety; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $4,975,000; and associated Engineering and Design and Supervision and Administration presently estimated at $947,000; pay all costs for making the existing Lake Wichita Dam safe, presently estimated at $2,400,000; pay five percent of the costs allocated to flood control, presently estimated at $2,000,000; and bear all costs of operation, maintenance and replacement of flood control facilities presently estimated at $132,000 annually. Local interests have also agreed to make all required payments and voluntary contributions concurrently with project construction.

STATUS OF LOCAL COOPERATION: The city of Wichita Falls, Texas, furnished a Resolution dated 14 October 1985 agreeing to the proposed cost sharing policies. To date, the City has removed one bridge, and is initiating action to acquire all real estate necessary for construction of the project and begin engineering and design for the utilities, street and highway bridges.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $30,000,000 is an increase of $13,600,000 over the latest estimate ($16,400.000) submitted to Congress. This change includes increases of $2,275,000 for an estimated inflation allowance through the construction period, $9,307,000 based on more detailed planning of construction and relocations, $2,193,000 for Engineering and Design and Supervision and Administration based on a recent analysis of requirements, and $300,000 for price levels. These increases were partially offset by a decrease of $475,000 based on adjustments between Federal and non-Federal cost estimates with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 5 March 1981. A Supplemental Environmental Information Report was submitted to the Environmental Protection Agency in January 1986.

The provisions of Section 404 of the Clean Water Act will be met with the submission of a Supplemental Environmental Information Report, including a Section 404 (b)(1) Evaluation to Congress in the fourth quarter of FY 1986, and will require a subsequent authorization action on this project by Congress.

OTHER INFORMATION: Funds to initiate Continuation of Planning and Engineering were appropriated in FY 1982. Current project cost and benefit-cost ratio are based on the Holliday Creek portion of the project.

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Studies on McGrath Creek, a tributary of Holliday Creek about 2 miles below the Lake Wichita Dam, have been added to the Lake Wichita, Holliday Creek continuation of planning and engineering effort. No major flood damages had occurred along McGrath Creek prior to completion of the Lake Wichita-Holliday Creek Flood Control Study. Major flooding occurred in the city of Wichita Falls on 12-14 May 1982 resulting in city-wide damages of $34,500,000 ($39,000,000 October 1985 prices). Sixty percent, $21,500,000, ($24,700,000 October 1985 prices), of the city-wide damages occurred to the relatively new high value developments along McGrath Creek. Current value of property subject to flood damages from McGrath Creek is in excess of $100,000,000. The preliminary estimate indicates annual damage on McGrath Creek is in excess of $1,000,000.

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Lake Wichita, Holliday Creek
at Wichita Falls, Texas

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Tulsa

Project: Lake Wichita, Holliday Creek at Wichita Falls, Texas

	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	16,400 1/ (Oct 84)		16,400 1/		30,000 1/2/
Reason for Change		(0)		(13,600) 2/	
a. Price Escalation		0		2,575	
b. Design Changes		0		9,307	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimating Adjustments		0		1,718 3/	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		0	

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes $2,275 allowance for estimated inflation from 1 October 1985 through the construction period.
3/ Includes an increase of $2,193 for reanalysis of requirements for Engineering and Design and Supervision and Administration partially offset by a decrease of $475 based on adjustments between Federal and non-Federal cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

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APPROPRIATION TITLE:
CONSTRUCTION GENERAL

CLASSIFICATION, FLOOD CONTROL (LOCAL PROTECTION)
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR 1987	BALANCE TO COMPLETE AFTER FY 1987
RELOCATIONS	986,000	-	-	-	986,000
DAMS	8,564,000	-	-	-	8,564,000
CHANNELS	19,516,000	-	-	200,000	19,316,000
ENGINEERING AND DESIGN	2,648,000	-	20,000	452,000	2,176,000
SUPERVISION AND ADMINISTRATION	2,686,000	-	5,000	148,000	2,533,000
TOTAL APPLIED COST (FEDERAL FUNDS AND NON-FEDERAL CONTRIBUTIONS)	34,400,000	-	25,000	800,000	33,575,000
UNDISTRIBUTED COST (NONE)					
TOTAL PROJECT COST (FEDERAL FUNDS AND NON-FEDERAL CONTRIBUTIONS)	34,400,000	-	25,000	800,000	33,575,000
TOTAL COST (FEDERAL FUNDS AND NON-FEDERAL CONTRIBUTIONS)	34,400,000	-	25,000	800,000	33,575,000
UNDELIVERED ORDERS (NONE)					
TOTAL OBLIGATIONS (FEDERAL FUNDS AND NON-FEDERAL CONTRIBUTIONS)		-	25,000	800,000	33,575,000
FEDERAL FUNDS					
TOTAL COST	30,000,000	-	25,000	700,000	29,275,000
UNDELIVERED ORDERS (NONE)					
TOTAL OBLIGATIONS		-	25,000	700,000	29,275,000
NON-FEDERAL CONTRIBUTIONS					
TOTAL COST	4,400,000	-	-	100,000	4,300,000
UNDELIVERED ORDERS (NONE)					
TOTAL OBLIGATIONS		-	-	100,000	4,300,000

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EFFECTIVE 1 JAN 86 DIVN, SOUTHWESTERN DIST, TULSA

REGION, BASIN, ARKANSAS-WHITE-RED RED-WASHITA

PROJECT, LAKE WICHITA, HOLLIDAY CREEK AT WICHITA FALLS, TEXAS

4 FEB 1986

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APPROPRIATION TITLE:
CONSTRUCTION GENERAL

CLASSIFICATION, FLOOD CONTROL (LOCAL PROTECTION)
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR 1987	BALANCE TO COMPLETE AFTER FY 1987
METHOD OF FINANCING					
FEDERAL FUNDS					
ALLOCATIONS		-	25,000 1/		
UNOBLIGATED CARRYOVER FROM PRIOR YEAR			-		
TOTAL FUNDS AVAILABLE FOR OBLIGATION			25,000		
APPROPRIATION REQUIRED				700,000	29,275,000
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS	4,400,000	-	-	100,000	4,300,000
OTHER COSTS					
LANDS AND DAMAGES	2,778,000	-	-	1,335,000	1,443,000
RELOCATIONS	4,975,000	-	-	175,000	4,800,000
ENGINEERING AND DESIGN	473,000	-	-	82,000	391,000
SUPERVISION AND ADMINISTRATION	474,000	-	-	8,000	466,000
TOTAL NON-FEDERAL COST	13,100,000			1,700,000	11,400,000

1/ Reflects $25,000 transfer to the project for Continuation of Planning and Engineering.

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EFFECTIVE 1 JAN 86 | DIVN, SOUTHWESTERN DIST, TULSA | REGION, ARKANSAS-WHITE-RED BASIN, RED-WASHITA | PROJECT, LAKE WICHITA, HOLLIDAY CREEK AT WICHITA FALLS, TEXAS

4 FEB 680

APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: San Antonio Channel Improvement, Texas (Continuing)

LOCATION: The project is located in the City of San Antonio, Bexar County, Texas.

AUTHORIZATION: Flood Control Act of 1954 and Water Resources Development Act of 1976

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 2.5 to 1 at 2-1/2 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1957) was 1.28 to 1. The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum % of Est Fed Cost
Estimated Federal Cost		$ 87,300,000	
Estimated Non-Federal Cost		68,300,000	
Cash Contribution	$ 2,300,000		
Other	66,000,000		
Total Estimated Project Cost		$155,600,000 1/	
Allocations to 30 September 1985		38,101,000	
Conference Allowance for FY 1986		2,000,000	
Allocation for FY 1986		2,000,000	
Allocations to Date		40,101,000	46
Allocation Requested for FY 1987		11,600,000	59
Scheduled Balance to Complete After FY 1987		35,599,000	
Unscheduled Balance to Complete After FY 1987		0	

1/ See "Other Information".

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	80	Jun 1990
Relocations:		
Railroads (Bridges)	66	Feb 1989
Channels:		
Alazan Cr Chann Impr	100	
Apache Cr Chann Impr	100	
Six Mile Cr Chann Impr (Protect Espada Aqueduct)	100	
Martinez Cr Chann Impr	85	Jun 1990
San Pedro Cr Chann Impr	60	Oct 1989
San Antonio Riv Chann Impr	72	Mar 1990

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Division: Southwestern

District: Fort Worth

Region: Texas Gulf

San Antonio Channel Improvement, Texas

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PHYSICAL DATA

Relocations:
Railroad bridges (11) ($848,000)

Structures:
One concrete drop structure approximately 50 feet wide, on Six Mile Creek, Unit 9-1

Channels:
Improvement consists of clearing, widening, deepening, and straightening approximately 34.9 miles of river and creek channels as follows: 14.4 miles along San Antonio River, 5.0 miles along San Pedro Creek, 4.0 miles along Apache Creek, 4.3 miles along Alazan Creek, 6.7 miles along Martinez Creek, and 0.5 mile along Six Mile Creek. Also involved is selective channel paving and the construction of concrete floodways, conduits, tunnels and diversion dike.

JUSTIFICATION: The improvements will provide a high degree of protection to the metropolitan area of San Antonio which has been subject to disastrous floods and heavy loss of life in the past. Approximately 3,085 acres of urban lands are subject to flooding in San Antonio. Property in the flood area is valued at about $537,300,000. The population in the flood area is estimated at 29,000 and there are approximately 31,000 additional persons employed in the area. The maximum flood of record occurred in September 1921 causing $949,000 in damages and affected areas totaling 2,900 acres. A recurrence of this flood under current conditions and October 1985 prices would result in damages estimated at $51,563,000. The last major flood occurred in May 1984 during which $10,325,000 in damages were prevented by completed portions of the project. A recurrence of this flood under current conditions and prices would cause damages estimated at $10,700,000, all of which would be prevented by the project. Other major floods affecting the city occurred in September 1946, September 1973, August 1974, September 1978, March 1983 and July 1983. Damages resulting from these floods amounted to $4,200,000, $15,500,000, $10,900,000, $13,000,000, $18,700,000, and $26,700,000 respectively at then prevailing prices. A recurrence of these floods at October 1985 prices with the project in operation would prevent $51,400,000, $34,400,000, $23,500,000, $19,800,000, $20,000,000, and $28,000,000 in damages, respectively. The average annual benefits, all flood control, are $11,014,000, based on 1 October 1985 prices.

FISCAL YEAR 1987: The requested amount will be applied as follows:

Continue Construction of Unit 7-3-1, Unit 8-4 and Unit 8-5 (tunnel)	$ 10,552,000
Continue Cultural Resources	95,000
Engineering and Design	220,000
Supervision and Administration	733,000
Total	$ 11,600,000

The funds requested are needed to maintain an orderly construction program compatible with local interests capability to furnish rights-of-way and accomplish relocation work.

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NON-FEDERAL COST: Local interests are required to furnish all lands, easements, and rights-of-way including relocations, make a cash contribution based on land enhancement benefits, and maintain and operate the project. The initial investment required of local interests in construction of the project is estimated at $68,300,000 as follows:

Lands, Relocation Payments, and Assistance to Displaced Persons	$ 21,540,000
Relocate/Reconstruct Channel Dams and Channel Rectification	27,650,000
Relocation of Highway Bridges	5,325,000
Relocation of Utilities	1,875,000
Cash Contribution (for land enhancement benefits)	2,300,000
Engineering and Design	7,450,000
Supervision and Administration	2,160,000
Total	$ 68,300,000

The average annual cost for maintenance, operation, and replacement is estimated at $679,600. Units of channel improvement are turned over to local interests for maintenance and operation as completed.

In addition, local interests have incurred costs of $4,555,000 for channel excavation and construction of Olmos Dam prior to initiation of construction of the authorized Federal project. Olmos Dam is a flood control detention reservoir with no permanent storage. It was constructed during 1925-26 at a cost of approximately $1,575,000. The dam will continue to operate as an integra part of the San Antonio Channel Improvement project.

STATUS OF LOCAL COOPERATION: The San Antonio River Authority, a State agency, by an ordinance passed on 28 February 1956, agreed to comply with all the requirements of local cooperation. Under a contract of 12 September 1955, the Authority was authorized to expend $12,000,000 on capital improvements; however, due to continuous increase in cost of construction and relocations, added channel improvement below Bergs Mill, increased land values, and local interests costs required by the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970, the Authority estimates $68,300,000 will now be required. Cash contributions in amount of $1,000,000 have been received from the Authority through September 1985 in compliance with requirements of the Flood Control Act of 1954. Rights-of-way have been furnished as required for construction performed to date. Thus far, local interests have expended approximately $48,000,000 for lands, required modifications of utilities and bridges, channel rectification, relocation/reconstruction of channel dams, payments required for relocation assistance, and required cash contributions.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $87,300,000 is an increase of $1,400,000 over the latest estimate ($85,900,000) submitted to Congress. This change includes an increase of $1,801,000 for Engineering and Design and Supervision and Administration and partially offset by decreases of $21,000 for deletion of Texas Transportation Railroad Bridge No. 4 due to tunnel, and $380,000 for adjustments in inflation allowance through the construction period.

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STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 9 November 1971. Final supplemental Environmental Impact Statement for Unit 8-3-2 was filed with the Environmental Protection Agency on 13 February 1981.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation, a Public Notice issued on 10 May 1978, a certification issued by the State of Texas on 20 October 1978, and the District Engineer's signature on Statement of Findings on 15 September 1978 for channel improvement - Six Mile Creek (Unit 9-1). State certification for Units 8-3, 8-4, and 8-5 was issued by the State of Texas on 3 September 1980 based on review of the draft supplement.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1956 and for construction in FY 1957. Redesign of Units 7-3-1, 8-4, and 8-5 is scheduled to be completed in July 1986. Studies to date indicate the overall project cost may increase for tunnel construction by about $36,000,000.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Fort Worth

Project: San Antonio Channel Improvement, Texas

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	14,700 (Jul 55)		85,900 1/		87,300 1/ 2/
Reason for Change		(71,200) 1/		(1,400) 2/	
a. Price Escalation		33,929		-380	
b. Design Changes		20,691		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		1,973		0	
e. Post-Contract Award and Other Estimating Adjustments		14,019		1,780 3/	
f. Schedule Changes		588		0	
g. Sundry		0		0	
h. Real Estate		0		0	

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes a decrease of $380 for adjustments in the inflation allowance through the construction period.
3/ Includes an increase of $1,801 for reanalysis of requirements for Engineering and Design and Supervision and Administration, and partially offset by a decrease of $21 for deletion of bridge due to tunnel.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: LOCAL PROTECTION PROJECTS (F:)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 1986	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1						
2	RELOCATIONS	848,000	560,000	-	-	288,000
3	CHANNEL	74,950,000	29,164,000	1,000,000	10,852,000	33,743,000
4	CULTURAL RESOURCE PRESERVATION	173,000	63,000	15,000	95,000	-
5	ENGINEERING AND DESIGN	8,358,000	6,690,000	1,120,000	220,000	328,000
6	SUPERVISION AND ADMINISTRATION	5,262,000	2,130,000	224,000	733,000	2,175,000
7						
8	TOTAL APPLIED COST (Federal Funds	89,600,000	38,807,000	2,359,000	11,900,000	36,534,000
9	and Non-Federal Contributions)					
10	UNDISTRIBUTED COST (None)					
11	TOTAL PROJECT COST (Federal Funds	89,600,000	38,807,000	2,359,000	11,900,000	36,534,000
12	and Non-Federal Contributions)					
13	TOTAL COST (Federal Funds and	89,600,000	38,807,000	2,359,000	11,900,000	36,534,000
14	and Non-Federal Contributions)					
15	UNDELIVERED ORDERS		54,000	-54,000		
16	TOTAL OBLIGATIONS		38,861,000	2,305,000	11,900,000	36,534,000
17						
18						
19						
20						
21						
22						
23						
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30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 January 1986	Southwestern	Texas Gulf	SAN ANTONIO CHANNEL IMPROVEMENT, TX
	DISTRICT Fort Worth, Texas	BASIN Guadalupe/San Antonio	

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: LOCAL PROTECTION PROJECTS (FC)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1						
2	FEDERAL FUNDS					
3	TOTAL COST	87,300,000	37,807,000	2,294,000	11,600,000	35,599,000
4	Undelivered Orders		54,000	-54,000		
5	TOTAL OBLIGATIONS		37,861,000	2,240,000	11,600,000	35,599,000
6						
7	NON-FEDERAL CONTRIBUTIONS					
8	TOTAL COST	2,300,000	1,000,000	65,000	300,000	935,000
9	Undelivered Orders (None)					
10	TOTAL OBLIGATIONS		1,000,000	55,000	300,000	935,000
11						
12	METHOD OF FINANCING:					
13	FEDERAL FUNDS					
14	ALLOCATIONS		38,101,000	2,000,000		
15	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			240,000		
16	TOTAL FUNDS AVAILABLE FOR OBLIGATION			2,240,000		
17	APPROPRIATIONS REQUIRED				11,600,000	35,599,000
18						
19						
20	NON-FEDERAL FUNDS					
21	CONTRIBUTIONS		1,000,000	65,000		
22	UNOBLIGATED CARRYOVER FROM PRIOR YEAR					
23	TOTAL FUNDS AVAILABLE FOR OBLIGATION			65,000		
24	CONTRIBUTIONS REQUIRED				300,000	935,000
25						
26						
27						
28						
29						
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 January 1986	Southwestern	Texas Gulf	SAN ANTONIO CHANNEL IMPROVEMENT, TX
	DISTRICT Fort Worth, Texas	BASIN Guadalupe/San Antonio	

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Taylors Bayou, Texas (Continuing)

LOCATION: The watershed of Taylors Bayou is located in Jefferson, Chambers, and Liberty Counties, in the extreme southeast corner of Texas adjoining the basins of the Neches River and Sabine Lake on the east, Pine Island Bayou on the north, Galveston Bay on the west, and coastal marshes along the Gulf of Mexico on the south.

AUTHORIZATION: Flood Control Act of 1965

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 1.9 to 1 at 3 1/4 percent. A benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1970) was 1.5 to 1. The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost
Estimated Federal Cost	$52,700,000	
Estimated Non-Federal Cost	26,292,000 1/	
Cash Contribution $17,972,000		
Other Costs 8,320,000		
Total Estimated Project Cost	$78,992,000	
Allocations to 30 September 1985	10,943,000	
Conference Allowance for FY 1986	4,800,000	
Allocation for FY 1986	4,800,000	
Allocations to Date	15,743,000	30
Allocation Requested for FY 1987	8,600,000	46
Scheduled Balance to Complete After FY 1987	28,357,000	
Unscheduled Balance to Complete After FY 1987	0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	20	Sep 1990

PHYSICAL DATA

Channels:		
GIWW Enlargement	-	1.8 miles
Outfall Canal	-	1.9 miles
Diversion Canal	-	2.9 miles
Taylors Bayou	-	6.0 miles
Hillebrandt Bayou	-	14.3 miles
Pivitot Bayou	-	1.5 miles
Willow Marsh Bayou	-	3.5 miles
Bayou Din	-	2.3 miles
	TOTAL	34.2 miles

1/ In addition, local interests have expended $1,954,000 on improvement of the major outlets within the limits established for the Federal project.

Division: Southwestern

District: Galveston

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Region: Texas-Gulf
Taylors Bayou, Texas
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JUSTIFICATION: Improvement of Taylors Bayou and its tributaries will significantly reduce the prevalent flood hazard in the upper watershed, and resultant economic losses; minimize damages to health and welfare and disruption of everyday community services and activities; and upgrade the habitability and growth of protected urban areas. The improvement of drainage which will accrue from rectification of the existing streams will provide desirable gains in both the quality and quantity of agricultural production in the portions of the watershed used for agriculture and improve forage areas for native waterfowl afforded by rice fields. The saltwater barrier will preserve the freshwater quality necessary for irrigation purposes in the upstream areas of the project. The barrier will also provide the Texas Parks and Wildlife Department with an effective management tool for controlling the water quality and salinity balance in the J. D. Murphree Wildlife Management area.

Damages experienced in 1963 were $3,796,000. A recurrence of the flood of 1963 would cause damages estimated at $34,800,000 (October 1985 prices). Average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$1,695,400
Major Drainage	3,147,200
Total	$4,842,600

FISCAL YEAR 1987: The requested amount will be applied as follows:

Continue Channel Rectification, Taylors Bayou	4,900,000
Initiate Channel Rectification, Hillebrandt Bayou	1,890,000
Engineering and Design	900,000
Supervision and Administration	910,000
Total	$8,600,000

The funds requested above are required to continue construction and meet the scheduled completion date.

NON-FEDERAL COST: The estimated cost to local interests for complying with the requirements of local cooperation for construction of the project is $26,292,000. This cost consists of: (1) a cash contribution equal to 25.4 percent of the construction cost of the work to be done on the Federal portion of the project, presently estimated at $17,881,000 or such equivalent items of work as may be agreed upon by the Federal Government and local interests, (2) a cash contribution for a portion of the mitigation measures, presently estimated at $91,000, (3) lands and damages $4,407,000, and (4) relocations $3,913,000. Annual maintenance and operation costs are presently estimated at $246,900.

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STATUS OF LOCAL COOPERATION: By resolution dated 25 February 1969, Jefferson County Drainage District No. 6 agreed to furnish all items of local cooperation and act for the Taylors Bayou Committee comprised of Jefferson County Drainage Districts Nos. 3, 6, and 7, and the Beaumont Navigation District. On 6 November 1979, two of the drainage districts with a financial majority of the local sponsorship of the project, passed bond issues totaling $17,000,000 to support the project. (Jefferson County Drainage District No. 6 - $15,000,000, and Jefferson County Drainage District No. 3 - $2,000,000.) The $17,000,000, combined with funds available to local sponsors, gives them a financial capability of about $20,000,000. The written local cooperation agreement as required by Section 221 of the Flood Control Act of 1970 was approved by Office, Chief of Engineers, on 2 November 1972.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $52,700,000 is a decrease of $1,900,000 from the latest estimate ($54,600,000) submitted to Congress. This change reflects a decrease in the estimated inflation allowance through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: A revised final Environmental Impact Statement was filed with the Council on Environmental Quality on 18 August 1975. A supplement to the statement was submitted to the Environmental Protection Agency in July 1981.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) evaluation report, a Public Notice with the District Engineer's signature on 14 November 1980, and a Certification by the State of Texas issued 10 April 1981.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1967. Funds to initiate construction were appropriated in FY 1970 and were allocated in FY 1971.

Construction was delayed because the authorized plan was not environmentally acceptable. Following severe flooding in 1979, the local sponsors indicated that the benefits from construction of the project were essential to the well-being of the watershed inhabitants. Therefore, studies and redesign were initiated in coordination with fish and wildlife agencies. The local sponsors presented support for the revised plan for the Taylors Bayou project. Construction started in FY 1982.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Galveston

Project: Taylors Bayou, Texas

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	$6,640 (Jul 68)		$54,600 1/		$52,700 1/2/
Reason for Change		($47,960) 1/		(-$1,900) 2/	
a. Price Escalation		32,691		-1,900	
b. Design Changes		0		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimating Adjustments		15,169		0	
f. Schedule Changes		0		0	
g. Sundry		100		0	
h. Real Estate		0		0	

1/Includes an allowance for estimated inflation through the construction period.
2/Includes a decrease of $1,900 for adjustments in the estimated inflation allowance through the construction period.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Local Protection Project Specifically Authorized by Congress (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
Fiscal Years 1986 and 1987

ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
CHANNELS	57,559,000	7,962,000	5,881,000	9,700,000	34,016,000
ENGINEERING AND DESIGN	6,924,000 1/	3,956,000	733,000	900,000	1,335,000
SUPERVISION AND ADMINISTRATION	6,189,000	974,000	400,000	910,000	3,905,000
TOTAL APPLIED COST (Federal Funds and Non-Federal Contributions)	70,672,000	12,892,000	7,014,000	11,510,000	39,256,000
Undistributed Cost (None)					
TOTAL PROJECT COST (Federal Funds and Non-Federal Contributions)	70,672,000	12,892,000	7,014,000	11,510,000	39,256,000
Pending Adjustments (None)					
TOTAL COST (Federal Funds and Non-Federal Contributions)	70,672,000	12,892,000	7,014,000	11,510,000	39,256,000
Undelivered Orders		+627,000	-627,000		
TOTAL OBLIGATIONS		13,519,000	6,387,000	11,510,000	39,256,000
FEDERAL FUNDS					
TOTAL COST	52,700,000	10,511,000	5,232,000	8,600,000	28,357,000
Undelivered Orders		+431,000	-431,000		
TOTAL OBLIGATIONS		10,942,000	4,801,000	8,600,000	28,357,000
NON-FEDERAL CONTRIBUTIONS					
TOTAL COST - CASH	17,972,000	2,381,000	1,782,000	2,910,000	10,899,000
Undelivered Orders		+196,000	-196,000		
TOTAL OBLIGATIONS		2,577,000	1,586,000	2,910,000	10,899,000

1/ E&D estimate includes 48,000 for RE activities (deed and title checks, gross appraisals, and field inspections).

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EFFECTIVE DATE 1 JANUARY 1986 DIVISION: SOUTHWESTERN DISTRICT: GALVESTON REGION: TEXAS-GULF BASIN: SABINE-NECHES PROJECT: TAYLORS BAYOU, TEXAS

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4 FEB 1986

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Local Protection Project Specifically Authorized by Congress (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
Fiscal Years 1986 and 1987

ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
METHOD OF FINANCING					
FEDERAL FUNDS					
Allocations		10,943,000	4,800,000		
Unobligated Carryover from Prior Year			1,000		
Total Funds Available for Obligation			4,801,000		
Appropriation Required				8,600,000	28,357,000
NON-FEDERAL CONTRIBUTIONS - CASH		4,200,000	0		
Unobligated Carryover from Prior Year			1,623,000	37,000	
Total Funds Available for Obligation			1,623,000		
Contributions Required				2,873,000	10,899,000
NON-FEDERAL COST					
Cash Contributions	17,972,000	2,381,000	1,782,000	2,810,000	10,899,000
Other Costs	8,320,000	2,820,000	2,913,000	2,587,000	0
Lands and Damages	(4,407,000)	(2,820,000)	(600,000)	(987,000)	(0)
Relocations	(3,913,000)	(0)	(2,313,000)	(1,600,000)	(0)
TOTAL NON-FEDERAL COST	26,292,000	5,201,000	4,695,000	5,497,000	10,899,000
TOTAL PROJECT COSTS					
Federal (Corps) Costs and Non-Federal Costs	78,992,000	15,712,000	9,927,000	14,097,000	39,256,000

EFFECTIVE DATE 1 JANUARY 1986 DIVISION: SOUTHWESTERN DISTRICT: GALVESTON REGION: TEXAS-GULF BASIN: SABINE-NECHES PROJECT: TAYLORS BAYOU, TEXAS

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Vince and Little Vince Bayous, Texas (Continuing)

LOCATION: The watershed of Vince Bayou and tributary, Little Vince Bayou, lies entirely within Harris County. Vince Bayou is a minor tributary of Buffalo Bayou in the San Jacinto River Basin located on the upper Gulf coast of Texas.

AUTHORIZATION: Flood Control Act of 1962

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 4.4 to 1 at 3 1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1966) was 1.1 to 1. The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost
Estimated Federal Cost	$19,600,000	
Estimated Non-Federal Cost	17,375,000	
Cash Contribution $ 0		
Other Costs 17,375,000		
Total Estimated Project Cost	$36,975,000	
Allocations to 30 September 1985	12,008,000	
Conference Allowance for FY 1986	4,000,000	
Allocation for FY 1986	3,300,000 1/	
Allocations to Date	15,308,000	78
Allocation Requested for FY 1987	2,800,000	92
Scheduled Balance to Complete After FY 1987	1,492,000	
Unscheduled Balance to Complete After FY 1987	0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	62	Dec 1987
Vince Bayou	100	Jul 1982
Little Vince Bayou	35	Dec 1987

PHYSICAL DATA

Channels:
- Vince Bayou - 7.29 miles
- Little Vince Bayou - 4.2 miles

Relocations:
- Railroads: Alteration to four bridges ($122,000)

1/Reflects $400,000 reduction assigned as savings and slippage and $300,000 transfer from the project.

JUSTIFICATION: The flood plain of the standard project flood on Vince Bayou watershed includes portions of the Cities of Pasadena, Houston, and South Houston. The area subject to flooding totals about 3,375 acres, of which 65 percent is either fully or partially developed and 35 percent is susceptible to development. Development within the flood plain includes commercial and residential properties, streets and bridges, utilities, parks and a cemetery. Value of physical property in the flood plain of the standard project flood is estimated at $559,964,000 (October 1985 prices).

Division: Southwestern District: Galveston Region: Texas-Gulf

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Vince and Little Vince Bayous, Texas

A recurrence of maximum known flood which occurred in 1945 and resulted in damages estimated at $3,400,000, would result in damages estimated at $21,813,000 (October 1985 prices). The damages that would result from occurrence of the standard project flood are estimated at $40,000,000 (October 1985 prices). Proposed improvements are designed to prevent all damages which would result from the standard project flood. Average annual benefits are $3,171,200, all flood control, based on 1 October 1985 prices.

FISCAL YEAR 1987: The requested amount will be applied as follows:

Continue Channel Rectification (Little Vince Bayou)	$2,695,000
Engineering and Design	15,000
Supervision and Administration	90,000
Total	$2,800,000

The funds requested above are required to continue construction and meet the scheduled completion date.

NON-FEDERAL COST: Local interests are required to furnish all lands, easements, and rights-of-way, including relocations, and to operate and maintain the project. The cost to the local sponsor for complying with the requirements of local cooperation is $17,375,000 which consists of $5,090,000 for lands and damages and $12,285,000 for relocations. Annual maintenance and operation costs are presently estimated at $135,000. In addition, local interests (Harris County Flood Control District) have spent about $185,000 on enlargement and rectification of channels on Vince and Little Vince Bayous.

STATUS OF LOCAL COOPERATION: Assurances presently estimated at $135,000. In addition, local interests (Harris County Flood Control District) have spent about $185,000 on enlargement and rectification of channels on Vince and Little Vince Bayous.

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STATUS OF LOCAL COOPERATION: Assurances of compliance with local cooperation requirements were furnished by the Harris County Flood Control District by letter 28 January 1964 and resolution of the Commissioners Court of Harris County on 23 January 1964. A bond issue to finance the cost of local cooperation was passed in July 1979.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $19,600,000 is unchanged from the latest estimate submitted to Congress. An increase of $97,000 in Engineering and Design based on a reanalysis of requirements was offset by a decrease of $97,000 for adjustment in the estimated inflation through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Environmental Protection Agency in February 1978. An Environmental Assessment and Finding of No Significant Impact for Little Vince Bayou was submitted to the Environmental Protection Agency on 17 June 1982.

The provisions of Section 404 of the Clean Water Act do not apply because improvements do not involve placement of fill material or the discharge of dredged material into the waters of the United States.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1964; and for construction in FY 1966.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Galveston

Project: Vince and Little Vince Bayous, Texas

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	$4,770 (Nov 64)		$19,600 1/		$19,600 1/2/
Reason for Change		$14,830 1/		0 2/	
a. Price Escalation		10,433		-97	
b. Design Changes		0		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimating Adjustments		4,397		97 3/	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		0	

1/Includes an allowance for estimated inflation through the construction period.
2/Includes a decrease of $97 for adjustments in the estimated inflation allowance through the construction period.
3/Includes an increase of $97 for Engineering and Design based on reanalysis of requirements.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Local Protection Project Specifically Authorized by Congress (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
Fiscal Years 1986 and 1987

ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
RELOCATIONS	122,000	122,000	0	0	0
CHANNELS	15,943,000	8,248,000	3,539,000	2,695,000	1,461,000
ENGINEERING AND DESIGN	2,090,000 1/	2,002,000	68,000	15,000	5,000
SUPERVISION AND ADMINISTRATION	1,445,000	1,189,000	140,000	90,000	26,000
TOTAL APPLIED COST (Federal Funds Only)	19,600,000	11,561,000	3,747,000	2,800,000	1,492,000
Undistributed Cost (None)					
TOTAL PROJECT COST (Federal Funds Only)	19,600,000	11,561,000	3,747,000	2,800,000	1,492,000
Pending Adjustments (None)					
TOTAL COST (Federal Funds Only)	19,600,000	11,561,000	3,747,000	2,800,000	1,492,000
Undelivered Orders		+437,000	-437,000		
TOTAL OBLIGATIONS		11,998,000	3,310,000	2,800,000	1,492,000

1/E&D estimate includes 65,000 for RE activities (deed and title checks, gross appraisals, and field inspections).

METHOD OF FINANCING

Allocations	12,800,000	3,300,000 2/		
Unobligated Carryover from Prior Year		10,000		
Total Funds Available for Obligation		3,310,000		
Appropriation Required			2,800,000	1,492,000

2/Reflects 400,000 reduction assigned as savings and slippage and 300,000 transfer from the project.

EFFECTIVE DATE 1 JANUARY 1986 DIVISION: SOUTHWESTERN DISTRICT: GALVESTON REGION: TEXAS-GULF BASIN: TRINITY-GALVESTON BAY PROJECT: VINCE AND LITTLE VINCE BAYOUS, TEXAS

4 FEB 1985

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Local Protection Project Specifically Authorized by Congress (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
Fiscal Years 1986 and 1987

ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
NON-FEDERAL COSTS					
Cash Contributions	0	0	0	0	0
Other Costs	17,375,000	12,827,000	4,548,000	0	0
Lands and Damages	(5,090,000)	(4,327,000)	(763,000)	(0)	(0)
Relocations	(12,285,000)	(8,500,000)	(3,785,000)	(0)	(0)
TOTAL NON-FEDERAL COSTS	17,375,000	12,827,000	4,548,000	0	0
TOTAL PROJECT COSTS					
Federal (Corps) Costs and Non-Federal Costs	36,975,000	24,388,000	8,295,000	2,800,000	1,492,000

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EFFECTIVE DATE 1 JANUARY 1986 DIVISION: SOUTHWESTERN DISTRICT: GALVESTON REGION: TEXAS-GULF BASIN: TRINITY-GALVESTON BAY PROJECT: VINCE AND LITTLE VINCE BAYOUS, TEXAS

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APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

PROJECT: Arcadia Lake, Oklahoma (Continuing)

Location: The project is located in Oklahoma County, Deep Fork River, 1-1/2 miles west of Arcadia, Oklahoma.

AUTHORIZATION: Flood Control Act of 1970 and Water Resources Development Act of 1976.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 5.3 to 1 at 6 7/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1980) was 1.4 to 1. The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

			Accum % Est Appn Reqrmts
Estimated Total Appropriation Reqrmt	$84,300,000		
Future Non-Federal Reimbursement	47,800,000		
Estimated Federal Cost (Ultimate)		$36,500,000	
Estimated Non-Federal Cost:		47,800,000	
Reimbursement: Water Supply	37,700,000		
Recreation	10,100,000		
Total Estimated Project Cost		$84,300,000	
Allocations to 30 September 1985		66,894,000	
Conference Allowance for FY 1986		6,000,000	
Allocation for FY 1986		5,900,000 1/	
Allocations to Date		72,794,000	86
Allocation Requested for FY 1987		5,900,000	93
Scheduled Balance to Complete after FY 1987		5,606,000	
Unscheduled Balance to Complete after FY 1987		0	

STATUS: (1 January 1986)

	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	78	Sep 1988
Land Acquisition	92	Jun 1988
Relocations	83	Dec 1986
Reservoir Clearing	100	Sep 1985
Dams	97	Sep 1986
Initiate Closure		Apr 1985
Complete Closure		Oct 1985
Start Impoundment		Sep 1986
Recreation	21	Sep 1988

1/ Reflects $2,100,000 reduction assigned as savings and slippage.

Division: Southwestern

District: Tulsa

4 FEB 1986

Region: Arkansas-White-Red

Arcadia Lake, Oklahoma

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PHYSICAL DATA

Dam: Type - Earthfill
Height - 104 feet
Length - 5,200 feet

Spillway: Type - Uncontrolled saddle
Maximum Discharge - 82,000 cfs

Relocations: Roads - 2.5 miles ($9,000,000)
Cemeteries and Utilities ($ 2,906,000)

Lake Capacity:		
	Flood Control	64,430 acre-feet
	Conservation	27,380 acre-feet
	Sedimentation	190 acre-feet
	Total	92,000 acre feet

Lands and Damages: Acres - 5,315
Type - Predominantly Agricultural
Improvements - Typical farm type

JUSTIFICATION: Construction of Arcadia Lake would provide partial flood protection to about 43,000 acres of rural development in Deep Fork River Basin. The value of the properties subject to flooding is estimated to be $73,250,000 (October 1985 prices), including minerals. The 1935 flood is considered to be the maximum flood of record, causing damages estimated at $443,000 ($8,460,000 at October 1985 prices). The last flood occurred in April 1985 and damages were estimated at $1,660,000 ($1,690,000 at October 1985 prices). The city of Edmond, Oklahoma, has an immediate need for additional water supply to supplement its present groundwater source. There is a growing demand for outdoor recreation facilities near the major population centers in the area. The average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$ 861,000
Water Supply	6,105,900
Recreation	1,712,000
Total	$8,678,000

700

700

4 FEB 1986

FISCAL YEAR 1987: The requested amount will be applied as follows:

Continue Lands and Damages	$ 363,000
Complete Relocations	400,000
Complete Left Access Road	107,000
Complete Project Building and Overlook	278,000
Continue Recreation Facilities	3,797,000
Complete Permanent Operating Equipment	5,000
Engineering and Design	350,000
Supervision and Administration	600,000
Total	$5,900,000

The funds requested above are required to continue construction and meet the scheduled completion date.

NON-FEDERAL COST: Local interests are required to reimburse the Federal Government for the cost allocated to water supply storage estimated at $37,700,000 and one-half the separable costs allocated to recreation, presently estimated at $10,100,000, and are responsible for operations and maintenance costs for both functions. Local interests will also be required to hold and save the United States free from water rights claims resulting from construction and operation of the project. The annual cost to local interests for operation, maintenance and replacements is estimated to be $763,100 of which $141,700 is for water supply, $621,400 is for recreation.

STATUS OF LOCAL COOPERATION: Contracts for water supply and recreation were signed by the City of Edmond, Oklahoma, on 19 March 1979. The Secretary of the Army signed the recreation contract on 6 September 1979. A written agreement as required by Section 221 of the Flood Control Act of 1970 was approved by the Secretary of the Army on 25 June 1979, and the water supply contract was approved by the Secretary of the Army on 13 November 1979.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $84,300,000 is a decrease of $200,000 over the latest estimate ($84,500,000) submitted to Congress. This change includes decreases of $45,000 for adjustments in the estimated inflation allowance through the construction period and $1,069,000 due to more detailed planning of construction. These decreases were partially offset by increases of $114,000 based on actual contract costs and $800,000 for Engineering and Design based on a recent reanalysis of requirements.

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STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The draft Environmental Impact Statement was filed with the Council on Environmental quality on 6 November 1975, an updated draft was filed on 9 August 1977, and the final Environmental Impact Statement was filed on 8 November 1977.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404 Evaluation Report signed by the District Engineer on 4 May 1977.

ADDITIONAL INFORMATION: Funds were appropriated to initiate preconstruction planning in FY 1972 and to initiate construction in FY 1980. Also, funds were allotted for land acquisition in advance of project construction in FY 1979. Water quality was deleted as a project purpose when reauthorized in 1976. The Environmental Protection Agency has concurred with the Waterways Experimental Station that water quality will be satisfactory for the project purposes.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Tulsa

Project: Arcadia Lake, Oklahoma

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price level)	61,679 (Oct 78)		84,500 1/		84,300 1/ 2/
Reason for Change		(22,821) 1/		(- 200) 2/	
a. Price Escalation		7,486		- 45	
b. Design Changes		15,629		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimating Adjustments		-12,073		- 155 3/	
g. Sundry		0		0	
h. Real Estate		11,779		0	

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes a decrease of $45 for adjustments in the estimated inflation allowance through the construction period.
3/ Includes a decrease of $1,069 due to more detailed planning of construction. The decrease was partially offset by increases of $114 based on actual contract costs and $800 for Engineering and Design based on a recent reanalysis of requirements.

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APPROPRIATION TITLE:
CONSTRUCTION GENERAL

CLASSIFICATION, FLOOD CONTROL (LOCAL PROTECTION)
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR 1987	BALANCE TO COMPLETE AFTER FY 1987
LANDS AND DAMAGES	27,300,000	24,645,000	700,000	363,000	1,592,000
RELOCATIONS	11,906,000	9,409,000	1,938,000	400,000	159,000
RESERVOIRS	1,514,000	781,000	666,000	-	67,000
DAMS	15,822,000	15,072,000	740,000	-	10,000
ROADS, RAILROADS AND BRIDGES	796,000	326,000	322,000	107,000	41,000
RECREATION	13,895,000	1,887,000	4,875,000	3,980,000	3,153,000
BUILDINGS, GROUNDS AND UTILITIES	259,000	14,000	124,000	95,000	26,000
PERMANENT OPERATING EQUIPMENT	357,000	122,000	222,000	5,000	8,000
ENGINEERING AND DESIGN	7,300,000	6,329,000	500,000	350,000	121,000
SUPERVISION AND ADMINISTRATION	5,151,000	3,422,000	700,000	600,000	429,000
TOTAL APPLIED COST (FEDERAL FUNDS AND NON-FEDERAL CONTRIBUTIONS)	84,300,000	62,007,000	10,787,000	5,900,000	5,606,000
UNDISTRIBUTED COST (NONE)	-	-	-		-
TOTAL PROJECT COST (FEDERAL FUNDS AND NON-FEDERAL CONTRIBUTIONS)	84,300,000	62,007,000	10,787,000	5,900,000	5,606,000
TOTAL COST (FEDERAL FUNDS AND NON-FEDERAL CONTRIBUTIONS)	84,300,000	62,007,000	10,787,000	5,900,000	5,606,000
UNDELIVERED ORDERS	-	2,187,000	-2,187,000	-	-
TOTAL OBLIGATIONS (FEDERAL FUNDS AND NON-FEDERAL CONTRIBUTIONS)	-	64,194,000	8,600,000	5,900,000	5,606,000
FEDERAL FUNDS					
TOTAL COST	84,300,000	62,007,000	10,787,000	5,900,000	5,606,000
UNDELIVERED ORDERS	-	2,187,000	-2,187,000		
TOTAL OBLIGATIONS	-	64,194,000	8,600,000	5,900,000	5,606,000
NON-FEDERAL CONTRIBUTIONS					
TOTAL COST	-0-				
UNDELIVERED ORDERS (NONE)					
TOTAL OBLIGATIONS	-0-				

EFFECTIVE 1 JAN 86 DIVN, SOUTHWESTERN DIST, TULSA

REGION, ARKANSAS-WHITE-RED BASIN, LOWER CANADIAN

PROJECT, ARCADIA LAKE, OKLAHOMA

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4 FEB 86

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APPROPRIATION TITLE:
CONSTRUCTION GENERAL

CLASSIFICATION, FLOOD CONTROL (LOCAL PROTECTION)
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR 1987	BALANCE TO COMPLETE AFTER FY 1987
METHOD OF FINANCING					
FEDERAL FUNDS					
ALLOCATIONS		66,894,000	5,900,000 1/		
UNOBLIGATED CARRYOVER FROM PRIOR YEAR			2,700,000		
TOTAL FUNDS AVAILABLE FOR OBLIGATION			8,600,000		
APPROPRIATION REQUIRED			-	5,900,000	5,606,000
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS	-0-				
OTHER COSTS	-0-				
LANDS AND DAMAGES					
RELOCATIONS					
ENGINEERING AND DESIGN					
SUPERVISION AND ADMINISTRATION					
TOTAL NON-FEDERAL COST	-0-				

1/ Reflects $2,100,000 reduction assigned as savings and slippage.

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APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

PROJECT: Cooper Lake and Channels, Texas (Continuing)

LOCATION: The dam will be located at mile 23.2 on the South Sulphur River in northeast Texas near the town of Cooper, Texas, and is upstream from the Wright Patman Reservoir.

AUTHORIZATION: Flood Control Act of 1955

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 1.9 to 1 at 3-1/4 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1958) was 1.13 to 1. The benefit-cost ratio was based on this project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum % of Est Appn Rqmts
Estimated Total Appropriation Requirement	$140,000,000 1/		
Future Non-Federal Reimbursement	55,928,000		
Estimated Federal Cost (Ultimate)		$ 84,072,000	
Estimated Non-Federal Cost		56,155,000	
Reimbursement - Water Supply	55,928,000		
Cash Contribution	0		
Other	227,000		
Total Estimated Project		$140,227,000	
Allocations to 30 September 1985		24,620,000	
Conference Allowance for FY 1986		3,000,000	
Allocation for FY 1986		3,000,000	
Allocations to Date		27,620,000	20
Allocation Requested for FY 1987		3,700,000	22
Scheduled Balance to Complete After FY 1987		101,542,000	
Unscheduled Balance to Complete After FY 1987		7,138,000 2/	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	18	Jan 92
Lands and Damages	98	Jun 91
Relocations	3	Dec 89
Reservoir	2	Sep 91
Dam	0	Jan 92
Roads	15	Jun 91
Channels and Canals	100	
Levees and Floodwalls	98	Feb 89
Recreation Facilities	0	Mar 91 3/
Cultural Resource Pres	0	Sep 90
Bldgs, Grds, and Utilities	0	Jan 91
Perm Oper Equipment	6	Jun 91

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1/ See "OTHER INFORMATION."
2/ Remaining recreation facilities are not scheduled pending development of cost sharing agreements with local interests for construction and non-Federal operation and maintenance, consistent with projects for which recreation facilities are being constructed under provisions of the Federal Water Project Recreation Act of 1965 (Public Law 89-72), as amended.
3/ Minimum facilities only.

Division: Southwestern

District: Fort Worth

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Region: Arkansas-White-Red
Cooper Lake and Channels, Texas

PHYSICAL DATA

Dam:
- Type: Rolled earthfill
- Height: 45 feet (average)
- Length: 28,070 feet
- Crest Elevation: 464.5 feet mean sea level

Service Spillway:
- Length of crest (feet) 700 feet
- Crest elevation (feet mean sea level) 446.2
- Uncontrolled ogee weir

Relocations:

Roads: (7.2 miles including 2 new bridges)	$4,382,000
Railroads: (Modify 2 bridges)	59,000
Cemeteries and Utility Lines: 3 cemeteries, power lines, telephone lines, gas lines, and water lines	1,657,000

Reservoir Capacity:

Reserve for sedimentation	37,000 acre-feet
Municipal and industrial water supply storage	273,000 acre-feet
Flood control	131,400 acre-feet
	441,400 acre-feet

Channels:
- Completed work - 67.4 miles

Outlet Works:
- Type: Single conduit 10.5 feet diameter, 530 feet long
- Sluices, number and size: 2-10.5 foot by 4.75 foot
- Elevation of Invert: 394.0 feet mean sea level
- Selector Gates:
  - 2-5 foot by 7.0 foot at 430 elevation
  - 1-2 foot by 2.5 foot at 414 elevation
  - 1-2 foot by 2.5 foot at 422 elevation

Lands and Damages:
- Acres: 32,153
- Type: Predominantly agriculture
- Improvements: Farm units
- Includes: Damage to minerals, severance, and resettlement

Roads, Railroads, and Bridges:
- Access roads to damsite - 2.9 miles
- Public use road across dam - 4.0 miles

Levees:
- Completed work - 47.3 miles
- Remaining work downstream from dam - 0.9 mile

JUSTIFICATION: The project will reduce flooding along Sulphur River, its North, Middle, and South Forks; Brushy Creek; and Cuthand Creek in East Texas. The project will protect 12,900 acres of land downstream which would permit more intensified agricultural uses. The maximum flood of record was the May 1982 flood which caused estimated damages of $5,327,000 ($6,710,000 October 1985 prices) of which $1,067,000 in damages would have been prevented by the project.

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The project will provide for 273,000 acre-feet of water supply storage space and will provide sufficient storage volume to permit conversion of 120,000 acre-feet of flood control space in Wright Patman Lake to water supply storage. The storage conversion is a future determination that will be made when Cooper Lake is complete. Recreation facilities will be provided to accommodate an anticipated 1,369,000 user-days volume annually. The average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$1,115,000
Water Supply	5,225,000
Recreation	2,073,000
Area Redevelopment	0
Total	$8,413,000

FISCAL YEAR 1987: The requested amount will be applied as follows:

Initiate Relocations	136,000
Initiate Embankment and Diversion Channel	300,000
Initiate Levee Downstream	400,000
Continue Lands and Damages	298,000
Continue Boundary Monumentation	25,000
Continue Cultural Resources Preservation	53,000
Complete Embankment Clearing	120,000
Complete North Access Road	537,000
Complete Boundary Delineation Part I	186,000
Engineering and Design	1,382,000
Supervision and Administration	263,000
Total	$3,700,000

The funds requested above are required to continue construction and meet the scheduled completion dates.

NON-FEDERAL COST: Local interests are required to reimburse the Federal Government for costs allocated to water supply storage. This reimbursement is presently estimated at $55,928,000. In addition, local interests were required to furnish without cost to the Federal Government $227,000, consisting of lands ($111,000) and easements, rights-of-way, and relocations ($116,000). All work required of local interests has been accomplished. The annual cost to local interests for maintenance, operation, and replacement is estimated at $167,000 for water supply.

STATUS OF LOCAL COOPERATION: All necessary original assurances from local interests have been supplied. Requests were made of all county commissioners courts involved to execute supplemental assurances covering the provisions of Public Law 91-646 pertaining to levee construction and channel improvement in August 1973. Supplemental assurances were received from the County Commissioners Courts of Franklin, Red River, Titus, and Hopkins Counties and were approved on behalf of the United States on 27 November 1973, 25 June 1974, 15 July 1974, and 23 July 1974, respectively. Local

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cooperation and assurances for the remaining unconstructed levee and channel work deleted with the currently recommended plan are no longer required. Completed levees and channels will be operated and maintained in accordance with current agreements or as subsequently modified. All necessary contracts for municipal and industrial water supply storage space with local interests and the Texas Water Development Board were signed and approved by the Secretary of the Army on 11 July 1968. Subsequent withdrawal of the Texas Water Development Board's participation resulted in modification of the existing contracts with the City of Irving, North Texas Municipal Water District and the Sulphur River Municipal Water District to assume additional water supply costs. The modified contracts were approved by the Acting Assistant Secretary of the Army (Civil Works) on 4 November 1977.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $140,000,000 is a decrease of $6,000,000 below the latest estimate ($146,000,000) submitted to Congress. This change includes increases of $205,000 based on contract awards and $12,000 for Supervision and Administration based on reanalysis of requirements. The increases were offset by a decrease of $6,217,000 for adjustment in the estimated inflation allowance through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 24 June 1977. On 8 December 1978 the U.S. District Court for the Eastern District of Texas declared that the Environmental Impact Statement was legally insufficient. A Supplemental Environmental Impact Statement to correct the deficiencies was prepared and filed with the Environmental Protection Agency in March 1981. On 22 March 1983 an Amended Memorandum Opinion and a Permanent Injunction against the construction of Cooper Lake was issued. On 16 July 1984 the New Orleans Fifth Circuit Court of Appeals reversed the District Courts Opinion and dissolved the injunction against the construction of Cooper Lake.

A State water quality certificate was granted by the Texas Department of Water Resources on 10 March 1978. The provisions of Section 404 of the Clean Water Act were met in March 1981 with the submission to the Environmental Protection Agency of a Supplemental Environmental Impact Statement including a Section 404(b)(1) Evaluation.

OTHER INFORMATION: Funds issued to initiate preconstruction planning were appropriated in FY 1957 and for construction in FY 1958. A court injunction on 8 December 1978, noting deficiencies in the Environmental Impact Statement enjoined the Corps from continuing construction on the project. A Supplemental Environmental Impact Statement which corrected the deficiencies, was completed in March 1981. On 16 July 1984 the District Court's opinion was reversed and the injunction against construction was dissolved. The Supplemental Environmental Impact Statement recommended changes in the benefits derived for flood control, water supply, fish and wildlife, and addition of wildlife mitigation measures. The changes for flood control and water supply were within the discretionary authority of the Chief of Engineers and were approved on 11 June 1981. Wildlife mitigation measures will require Congressional authorization prior to initiation of these features.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Fort Worth, Texas

Project: Cooper Lake and Channels, Texas

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	13,700 (Jul 56)		146,000 1/		140,000 1/ 2/
Reason for Change		(132,300) 1/		(-6,000) 2/	
a. Price Escalation		91,559		-6,235	
b. Design Changes		14,022			
c. Additional Function Added Under General Authorization					
d. Authorized Modification		1,332			
e. Post-Contract Award and Other Estimating Adjustments		16,609		217 3/	
f. Schedule Changes					
g. Sundry		815			
h. Real Estate		7,963		18	

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes a decrease of $6,217 for adjustments in the estimated inflation allowance through the construction period.
3/ Includes increases of $205 based on contract bids and $12 for Supervision and Administration based on a recent reanalysis of requirements.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: RESERVOIRS (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1						
2	LANDS AND DAMAGES	13,742,000	12,141,000	160,000	298,000	1,143,000
3	RELOCATIONS	5,568,000	118,000	46,000	136,000	5,268,000
4	RESERVOIRS	8,665,000	183,000	150,000	211,000	8,121,000
5	DAMS	73,345,000	0	300,000	420,000	72,625,000
6	ROADS	3,496,000	340,000	572,000	537,000	2,047,000
7	CHANNELS	479,000	479,000	0	0	0
8	LEVEES	2,073,000	1,530,000	0	400,000	143,000
9	RECREATION FACILITIES	9,131,000	0	0	0	9,131,000
10	CULTURAL RESOURCE PRESERVATION	985,000	0	26,000	53,000	906,000
11	BUILDINGS, GROUNDS AND UTILITIES	1,301,000	0	0	0	1,301,000
12	PERMANENT OPERATING EQUIPMENT	781,000	19,000	103,000	0	659,000
13	ENGINEERING AND DESIGN	11,524,000	8,025,000	1,618,000	1,382,000	499,000
14	SUPERVISION AND ADMINISTRATION	8,910,000	1,525,000	285,000	263,000	6,837,000
15						
16	TOTAL APPLIED COST (Federal Funds Only)	140,000,000	24,360,000	3,260,000	3,700,000	108,680,000
17	UNDISTRIBUTED COST (None)					
18	TOTAL PROJECT COST (Federal Funds Only)	140,000,000	24,360,000	3,260,000	3,700,000	108,680,000
19	PENDING ADJUSTMENTS (None)					
20	TOTAL COST (Federal Funds Only)	140,000,000	24,360,000	3,260,000	3,700,000	108,680,000
21	UNDELIVERED ORDERS		235,000	-235,000		
22	TOTAL OBLIGATIONS		24,595,000	3,025,000	3,700,000	108,680,000
23						
24	METHOD OF FINANCING:					
25	ALLOCATIONS		24,620,000	1,000,000		
26	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			25,000		
27	TOTAL FUNDS AVAILABLE FOR OBLIGATION			3,025,000	3,700,000	108,680,000
28	APPROPRIATIONS REQUIRED					
29						
30						
31						
32						
33						

EFFECTIVE DATE: 1 January 1986

DIVISION: Southwestern

DISTRICT: Fort Worth, Texas

REGION: Arkansas-White-Red

BASIN: Lower Red

PROJECT: COOPER LAKE AND CHANNELS, TEXAS

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APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

PROJECT: Joe Pool Lake, Texas (Continuing)

LOCATION: The Joe Pool dam will be located at mile 11.2 on Mountain Creek, a right bank tributary to the West Fork of the Trinity River in Dallas County, Texas.

AUTHORIZATION: River and Harbor Act of 1965

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 2.4 to 1 at 3¼ percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds in FY 1975 was 2.8 to 1. The benefit-cost ratio was based on the project's fair share of system benefits in the Trinity River system; as the next added unit in this system the benefit-to-cost ratio was 2.5 to 1.

SUMMARIZED FINANCIAL DATA

			Accum % of Est Appn Rqmts
Estimated Total Appropriation Requirement	$190,000,000		
Future Non-Federal Reimbursement	57,363,000		
Estimated Federal Cost (Ultimate)		$132,637,000	
Estimated Non-Federal Cost		67,863,000	
Reimbursement			
Water Supply	46,915,000		
Recreation	10,448,000		
Other (Recreation Cost Sharing)	10,500,000		
Total Estimated Project Cost		$200,500,000	
Allocations to 30 September 1985		157,838,000	
Conference Allowance for FY 1986		7,800,000	
Allocation for FY 1986		3,432,000 1/	
Allocations to Date		161,270,000	85
Allocations Requested for FY 1987		9,700,000	90
Scheduled Balance to Complete After FY 1987		19,030,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS: (1 January 1986)

	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	77	Jun 1989
Lands and Damages	92	Jun 1989
Relocations	97	Jun 1986
Reservoir	96	Jul 1987
Dam	97	Apr 1987
Roads	0	Sep 1987
Recreation Facilities	7	Jun 1989
Cultural Resource Preserv	41	Dec 1987
Bldgs, Grds, and Utilities	0	Oct 1987
Perm Oper Equipment	51	Sep 1986

1/ Reflects $4,300,000 reduction assigned as savings and slippage and $68,000 transfer from project.

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Division: Southwestern

District: Fort Worth

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Region: Texas Gulf

Joe Pool Lake, Texas

PHYSICAL DATA

Dam:
- Type - Rolled earthfill
- Height - 108.5 feet (max above streambed)
- Length - 22,360 feet (including 50 feet of spillway)

Reservoir Capacity

Flood Control	123,100 acre-feet
Water Supply	142,900 acre-feet
Sediment Reserve	38,000 acre-feet
Total	304,000 acre-feet

Lands

Fee	15,119 acres
Flowage Easements	2,020 acres
Total	17,139 acres

Type - Predominantly agriculture
Improvements - Typical farm units

Spillway:
- Type - Uncontrolled Broadcrested
- Length - 50 feet
- Design Capacity
  - Max Pool - 11,900 cubic feet per second

Relocations
- Roads - 9.4 miles ($20,215,000)
- Railroads - 1.6 miles ($3,116,000)
- Cemeteries, Utilities, and Structures - ($2,164,000)

JUSTIFICATION: The project is an authorized element in the plan for improvement of the Trinity River Basin. Flood control storage on Mountain Creek will reduce flood damages in the Dallas area. The project will provide: (a) a high level of flood protection to about 33,000 acres, all urban, located immediately below the dam where property values are estimated at $1,265,000,000, based on October 1985 prices, and protection in varying degrees to more than 500,000 additional flood plain acres along Mountain Creek and the Trinity River. The estimated 1985 basin needs are 793,000 acres of flood protection; (b) A water supply of 14.2 million gallons per day under initial conditions of development against an estimated 1985 need for the upper basin of 38.4 million gallons per day; and (c) Recreation of some 6,300,000 recreation days (3,800,000 initially) annually against a 1985 basin need for 117,584,000 recreation days annually. The maximum flood of record occurred in April 1976 and caused damages amounting to $8,560,000 at then prevailing prices. A recurrence of this flood under present conditions of flood plain development and October 1985 prices would cause damages estimated at $15,237,000, of which $3,656,000 would be prevented with the project in operation. In the past five fiscal years, there have been two damaging floods. The duration of flooding varies from about two days in the vicinity of the damsite to about 14 days in the lower reaches of the Trinity River. The average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$ 8,201,000
Water Supply	7,976,000
Recreation	5,515,000
Total	$21,692,000

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FISCAL YEAR 1987: The requested amount will be applied as follows:

Continue Land Acquisition	$ 2,032,000
Complete Revegetation and Boundary Delineation	212,000
Complete Drainage below Embankment	350,000
Initiate and Complete Access Road	75,000
Continue Recreation Facilities	5,250,000
Continue Cultural Resource Preservation	450,000
Initiate Visitor's Overlook and Project Office	465,000
Engineering and Design	485,000
Supervision and Administration	381,000
Total	$ 9,700,000

The funds requested above are required to continue construction and meet the scheduled completion dates.

NON-FEDERAL COSTS: Local interests are required to reimburse the Federal Government for costs allocated to water supply storage and one-half of the separable costs allocated to recreation. This reimbursement is presently estimated at $46,915,000 for water supply and $10,448,000 for recreation (excluding future recreation facilities), for a total of $57,363,000 exclusive of interest. In addition to the reimbursable cost, the State of Texas has agreed to provide construction of recreation facilities in a State park which will result in a first cost to the State currently estimated at $10,500,000. The annual cost to local interests for maintenance, operation, and replacements is $211,000 for water supply and $967,000 for recreation for a total of $1,178,000.

STATUS OF LOCAL COOPERATION: The Trinity River Authority, a State agency, by letters dated 20 March 1969 and 18 July 1969 certified assurance of the capability and willingness to provide the items required of local interests. By agreement dated 19 April 1972, the Trinity River Authority provided assurances incorporating the relocation assistance and real property acquisition policies of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Federal Water Project Recreation Act of 1965, and written agreement requirement of Section 221 of the River and Harbor Act of 1970. These assurances were confirmed by letter of 3 May 1973. The water supply contract was executed by the Trinity River Authority on 29 September 1976 and approved by the Acting Assistant Secretary of the Army on 15 June 1977. The recreation contract with Trinity River Authority was approved by Acting Assistant Secretary of the Army on 15 June 1977. This contract was modified on 28 March 1979 to allow the Corps to participate with the State of Texas and approved by the Assistant Secretary of the Army on 21 March 1980. The contract with the State of Texas for recreation development was approved by the Assistant Secretary of the Army on 21 March 1980.

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COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $190,000,000 is an increase of $2,300,000 from the latest estimate ($187,700,000) submitted to Congress. This change includes increases of $2,015,000 based on more detailed planning of construction, $377,000 for contract awards, $32,000 for construction modifications and $1,624,000 for Engineering and Design and Supervision and Administration based on a recent reanalysis of requirements. These increases were partially offset by net decreases of $600,000 from reanalysis of remaining Real Estate acquisition and $1,148,000 for adjustments in the estimated inflation allowance through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with Council on Environmental Quality on 2 December 1973.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation Report signed by the District Engineer on 23 September 1977.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1968. Funds were appropriated in FY 1973 for a restudy of alternatives on Joe Pool Lake. Funds to initiate construction were appropriated in FY 1975. Land acquisition was initiated in September 1977 and construction was initiated in March 1979.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Fort Worth

Project: Joe Pool Lake, Texas

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	105,000 (Jul 73)		187,700 1/		190,000 1/ 2/
Reason for Change		(82,700) 1/		(2,300) 2/	
a. Price Escalation		75,470		(-)1,148	
b. Design Changes		23,557		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		(-)4,833		0	
e. Post-Contract Award and Other Estimating Adjustments		(-)111,433		3,448 3/	
f. Schedule Changes		0		0	
g. Sundry		207		0	
h. Real Estate		99,732		0	

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes a decrease of $1,148 for adjustments in the estimated inflation allowance through the construction period.
3/ Includes an increase of $2,015 for more detailed planning, $377 for contract awards, $32 for modifications, and $1,624 for Engineering and Design and Supervision and Administration based on a reanalysis of requirements. These increases were partially offset by a decrease of $600,000 from reanalysis of remaining Real Estate acquisition.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: RESERVOIRS (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1						
2	LANDS AND DAMAGES	72,187,000	64,224,000	3,741,000	2,032,000	2,190,000
3	RELOCATIONS	25,495,000	23,980,000	1,515,000	-	-
4	RESERVOIRS	11,554,000	10,760,000	582,000	212,000	-
5	DAMS	39,163,000	37,589,000	1,224,000	350,000	-
6	ROADS	75,000	-	-	75,000	-
7	RECREATION FACILITIES	30,549,000	1,602,000	983,000	8,450,000	19,514,000
8	CULTURAL RESOURCE PRESERVATION	1,312,000	478,000	260,000	450,000	124,000
9	BUILDINGS, GROUNDS AND UTILITIES	598,000	-	-	465,000	133,000
10	PERMANENT OPERATION EQUIPMENT	414,000	178,000	236,000	-	-
11	ENGINEERING AND DESIGN	10,899,000	9,363,000	1,001,000	485,000	50,000
12	SUPERVISION AND ADMINISTRATION	8,254,000	6,025,000	429,000	631,000	1,169,000
13						
14	TOTAL APPLIED COST (Federal Funds	200,500,000	154,199,000	9,971,000	13,150,000	23,180,000
15	and Non-Federal Contributions)					
16	UNDISTRIBUTED COST (None)					
17	TOTAL PROJECT COST (Federal Funds	200,500,000	154,199,000	9,971,000	13,150,000	23,180,000
18	and Non-Federal Contributions)					
19	TOTAL COST (Federal Funds and	200,500,000	154,199,000	9,971,000	13,150,000	23,180,000
20	and Non-Federal Contributions)					
21	UNDELIVERED ORDERS		2,482,000	-2,482,000		
22	TOTAL OBLIGATIONS		156,681,000	7,489,000	13,150,000	23,180,000
23						
24						
25						
26						
27						
28						
29						
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32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 January 1986	Southwestern	Texas Gulf	JOE POOL LAKE, TEXAS
	DISTRICT Fort Worth, Texas	BASIN Upper Trinity	

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: RESERVOIRS (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM (a)	PROJECT COST ESTIMATE (b)	TOTAL TO 30 SEP 19 85 (c)	CURRENT FY 1986 (d)	BUDGET FY 1987 (e)	BALANCE TO COMPLETE AFTER FY 19 87 (f)
1						
2	FEDERAL FUNDS					
3	TOTAL COST	190,000,000	151,874,000	9,396,000	9,700,000	19,030,000
4	Undelivered Orders		2,482,000	-2,482,000		
5	TOTAL OBLIGATIONS		154,356,000	6,914,000	9,700,000	19,030,000
6						
7	NON-FEDERAL CONTRIBUTIONS					
8	TOTAL COST	10,500,000	2,325,000	575,000	3,450,000	4,150,000
9	Undelivered Orders (None)					
10	TOTAL OBLIGATIONS		2,325,000	575,000	3,450,000	4,150,000
11						
12	METHOD OF FINANCING:					
13	FEDERAL FUNDS					
14	ALLOCATIONS		157,838,000	3,432,000	1/	
15	UNOBLICATED CARRYOVER FROM PRIOR YEAR			3,482,000		
16	TOTAL FUNDS AVAILABLE FOR OBLIGATIONS			6,914,000		
17	APPROPRIATIONS				9,700,000	19,030,000
18						
19	1/ Reflects $4,300,000 reduction assigned as savings and slippage and $68,000 transferred from project.					
20						
21	NON-FEDERAL FUNDS					
22	CONTRIBUTIONS		2,325,000	575,000		
23	UNOBLICATED CARRYOVER FROM PRIOR YEAR			-		
24	TOTAL FUNDS AVAILABLE FOR OBLIGATION			575,000		
25	CONTRIBUTIONS REQUIRED				3,450,000	4,150,000
26						
27						
28						
29						
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 January 1986	Southwestern	Texas Gulf	JOE POOL LAKE, TEXAS
	DISTRICT Fort Worth, Texas	BASIN Upper Trinity	

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APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

PROJECT: Ray Roberts Lake, Texas (Continuing)

LOCATION: Ray Roberts Lake will be located at river mile 60.0 on the Elm Fork of the Trinity River, in northeast Denton County, Texas, between the towns of Sanger and Aubrey and 30 miles upstream from the existing Lewisville Dam.

AUTHORIZATION: River and Harbor Act of 1965

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 4.8 to 1 at 3¼ percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1975) was 2.4 to 1. The benefit-cost ratio is based on the project's fair share of system benefits in the Trinity River System.

SUMMARIZED FINANCIAL DATA

			Accum % of Est Appn Rqmts
Estimated Total Appropriation Requirement	$282,000,000		
Future Non-Federal Reimbursement	179,428,000		
Estimated Federal Cost (Ultimate)		$102,572,000	
Estimated Non-Federal Cost		179,428,000	
Reimbursement			
Water Supply	159,072,000		
Recreation	20,086,000		
Fish and Wildlife Enhancement	270,000		
Total Estimated Project		282,000,000	
Allocations to 30 September 1985		153,595,000	
Conference Allowance for FY 1986		52,000,000	
Allocation for FY 1986		46,100,000 1/	
Allocations to Date		199,695,000	71
Allocation Requested for FY 1987		34,000,000	83
Scheduled Balance to Complete After FY 1987		48,305,000	
Unscheduled Balance to Complete After FY 1987		0	

1/ Reflects $5,900,000 reduction assigned as savings and slippage.

STATUS: (1 January 1986)

	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	53	Apr 1990
Lands and Damages	77	Apr 1990
Relocations	50	Dec 1988
Reservoir	16	Nov 1988
Dam	89	Jul 1986
Roads	29	Jun 1988
Recreation Facilities	0	Apr 1990
Cultural Resource Preserv	49	Sep 1988
Bldgs, Grds, and Utilities	7	Jun 1988
Perm Oper Equipment	1	Sep 1987

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Division: Southwestern

District: Fort Worth

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Region: Texas Gulf
Ray Roberts Lake, Texas

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PHYSICAL DATA

Dam:
Type - Rolled earth
Height - 141 feet (max above streambed)
Length - 14,965 feet

Reservoir Capacity		
Flood Control		260,800 acre-feet
Water Supply	-	749,200 acre-feet
Sediment Reserve	-	54,600 acre-feet
Total		1,064,600 acre-feet

Lands	
Fee	- 46,028 acres
Flowage easements	- 2,538 acres
Total	48,566 acres

Type - Predominantly agriculture
Improvement - Varied farm and ranch units

Spillway:
Type - Uncontrolled Broadcrested
Length - 100 feet
Design Capacity
(Max Pool) - 14,500 cubic feet per second

Relocations
Roads - 42.5 miles ($42,522,000)
Railroads - 2.7 miles ($6,478,000)
Cemeteries, Utilities, and Structures - ($5,921,000)

JUSTIFICATION: The project is an authorized element in the plan of improvement of the Trinity River Basin. The flood control storage in Ray Roberts Lake will allow reallocation of storage in the lake behind Lewisville Dam downstream to increase storage allocated to water supply. The project will provide 74.3 million gallons per day for municipal and industrial water supply and satisfy recreation needs of 6,000,000 user days annually (includes increases due to Lewisville Modification). Estimated average annual benefits are as follows:

Benefits	Amounts (1 October 1985)
Water Supply	$15,270,000
Recreation	6,243,000
Total	$21,513,000

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FISCAL YEAR 1987: The requested amount will be applied as follows:

Continue Land Acquisition	$12,581,000
Continue Relocations	9,920,000
Continue Boundary Monumentation, Initiate Boundary Delineation Parts 4 and 5, Oil Well Plugging and Clearing at Lewisville Lake, Complete Clearing at Ray Roberts	4,942,000
Complete Deliberate Impoundment and Periodic Inspection	89,000
Initiate and Complete Fish and Wildlife Facilities	933,000
Initiate and Complete Recreation Facilities Part 1	2,904,000
Continue Cultural Resource Preservation	197,000
Complete Permanent Operating Equipment	457,000
Engineering and Design	568,000
Supervision and Administration	1,409,000
Total	$34,000,000

The funds requested above are required to continue construction and meet the scheduled completion dates.

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NON-FEDERAL COST: Local interests are required to reimburse the Federal Government for costs allocated to water supply storage, one-half of the separable costs allocated to recreation and one-fourth of the separable costs allocated to fish and wildlife enhancement. This non-Federal reimbursement is presently estimated at $179,428,000 which includes $159,072,000 for water supply storage and $270,000 for fish and wildlife enhancement. The recreation reimbursement is estimated at $20,086,000 exclusive of interest and future recreation facilities and will be furnished by local interests subsequent to the completion of the project. The annual cost to local interests for maintenance, operation, and replacements is $254,000 for water supply and $1,123,000 for recreation for a total of $1,377,000.

STATUS OF LOCAL COOPERATION: The cities of Dallas and Denton, Texas, were designated as co-sponsors of the project by the Texas Water Rights Commission on 4 June 1969. Both cities have signed formal assurances, Dallas on 6 January 1975 and Denton on 18 September 1974, that they would provide the items required by local interests. Updated resolutions were passed by the cities of Dallas and Denton on 30 January 1980 and 22 January 1980, respectively. Water supply and recreation contracts with the cities of Dallas and Denton were approved by the Assistant Secretary of the Army on 16 September 1980. The recreation contracts are being revised to include current negotiations with the Texas Parks and Wildlife Department to assume a portion of the cities recreational development, a Greenbelt Corridor and fish and wildlife facilities, including operation and maintenance of the facilities. Revised recreation contracts are currently scheduled to be signed by the Assistant Secretary of the Army in the first quarter of FY 1987.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $282,000,000 is an increase of $2,000,000 over the latest estimate submitted ($280,000,000) to Congress. This change includes increases of $84,000 for modifications, $8,609,000 based on more detailed planning of construction and relocations, $893,000 for addition of Fish and Wildlife enhancement, and $2,570,000 for Engineering and Design and Supervision and Administration based on a recent reanalysis of requirements. These increases were partially offset by net decreases of $7,950,000 due to favorable bids received and $2,206,000 for adjustments in the estimated inflation allowance through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 4 March 1974. An updated supplement was filed on 18 September 1975.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation Report signed by the District Engineer on 12 September 1980 and a Water Quality Certificate has been received 3 September 1980 from the State of Texas.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1970 and for initiation of construction in FY 1975. Land acquisition was initiated in September 1980 and construction was initiated in September 1981. A post-authorization change report for adding a Greenbelt corridor between Ray Roberts Lake and Lewisville Lake is currently being reviewed by the Chief of Engineers.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Fort Worth

Project: Ray Roberts Lake, Texas

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	110,000 (Jul 73)		280,000 1/		282,000 1/ 2/
Reason for Change		(170,000) 1/		(2,000) 2/	
a. Price Escalation		84,655		-2,020	
b. Design Changes		12,344		0	
c. Additional Function Added Under General Authorization		0		893 4/	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimating Adjustments		- 43,766		3,313 3/	
f. Schedule Changes		0		0	
g. Sundry		582		0	
h. Real Estate		116,185		-186 5/	

1/ Includes an allowance for estimated inflation through construction period.
2/ Includes a decrease of $2,206 for adjustments in the estimated inflation allowance through the construction period.
3/ Includes increases of $84 for modifications and $8,609 based on more detail planning of construction and relocations and $2,570 for reanalysis of Engineering and Design and Supervision and Administration; partially offset by a decrease of $7,950 for contract awards.
4/ Addition of Fish and Wildlife facilities under provisions of PL 89-72.
5/ Includes a decrease of $186 for adjustment in the estimated inflation allowance through the construction period.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: RESERVOIRS (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1						
2	LANDS AND DAMAGES	108,448,000	65,795,000	18,499,000	12,581,000	11,573,000
3	RELOCATIONS	54,921,000	20,819,000	20,243,000	10,201,000	3,658,000
4	RESERVOIRS	10,367,000	1,601,000	202,000	4,942,000	3,622,000
5	DAMS	50,600,000	42,701,000	7,810,000	89,000	-
6	FISH AND WILDLIFE FACILITIES	933,000	-	-	933,000	-
7	POWER PLANT	579,000	579,000	-	-	-
8	ROADS	345,000	101,000	99,000	-	145,000
9	RECREATION FACILITIES	29,049,000	-	-	2,904,000	26,145,000
10	CULTURAL RESOURCE PRESERVATION	919,000	448,000	155,000	197,000	119,000
11	BUILDINGS, GROUNDS AND UTILITIES	224,000	15,000	-	-	209,000
12	PERMANENT OPERATION EQUIPMENT	569,000	8,000	104,000	457,000	-
13	ENGINEERING AND DESIGN	13,366,000	11,583,000	950,000	568,000	265,000
14	SUPERVISION AND ADMINISTRATION	11,680,000	5,657,000	2,045,000	1,409,000	2,569,000
15						
16	TOTAL APPLIED COST (Federal Funds Only)	282,000,000	149,307,000	50,107,000	34,281,000	48,305,000
17	UNDISTRIBUTED COST (None)					
18	TOTAL PROJECT COST (Federal Funds Only)	282,000,000	149,307,000	50,107,000	34,281,000	48,305,000
19	PENDING ADJUSTMENTS (None)					
20	TOTAL COST (Federal Funds Only)	282,000,000	149,307,000	50,107,000	34,281,000	48,305,000
21	UNDELIVERED ORDERS		2,959,000	-2,678,000	-281,000	
22	TOTAL OBLIGATIONS		152,266,000	47,429,000	34,000,000	48,305,000
23						
24	METHOD OF FINANCING:					
25	FEDERAL FUNDS					
26	ALLOCATIONS		153,595,000	46,100,000	1/	
27	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			1,329,000		
28	TOTAL FUNDS AVAILABLE FOR OBLIGATION			47,429,000		
29	APPROPRIATIONS REQUIRED				34,000,000	48,305,000
30						
31	1/ Reflects $5,900,000 reduction assigned as savings and slippage.					
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 January 1986	Southwestern	Texas Gulf	
	DISTRICT Fort Worth, Texas	BASIN Upper Trinity	RAY ROBERTS LAKE, TEXAS

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APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

PROJECT: San Gabriel River, Texas (Continuing)

LOCATION: The improvement will consist of a system of three lakes located in Williamson County in the San Gabriel River watershed. Granger Dam is located at river mile 31.9 about 7 miles east of Granger, Texas. North San Gabriel Dam is located at river mile 4.3 on the North Fork of the San Gabriel River about 3.5 miles northwest of Georgetown, Texas. South Fork Dam will be located at river mile 4.7 on the South Fork of San Gabriel River about 3 miles southwest of Georgetown, Texas.

AUTHORIZATION: Flood Control Acts of 1954 and 1962

BENEFIT-COST RATIO: Reformulation of the remaining portion of the project is underway, consequently a remaining benefit-remaining cost ratio is not currently available. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1971) was 1.7 to 1. The benefit-cost ratio was based on the project's fair share of system benefits in the Brazos River system. As the next added unit in this system, the benefit-cost ratio was 2.4 to 1.

SUMMARIZED FINANCIAL DATA

			Accum % of Est Appn Rqmts
Estimated Total Appropriation Requirement	$125,800,000		
Future Non-Federal Reimbursement	19,712,000		
Estimated Federal Cost (Ultimate)		$106,088,000	
Estimated Non-Federal Cost		53,912,000	
Reimbursement - Water Supply	19,712,000		
Cash Contributions	34,200,000		
Total Estimated Project Cost		$160,000,000	
Allocations to 30 September 1985		101,582,000	
Conference Allowance for FY 1986		200,000	
Allocation for FY 1986		200,000	
Allocations to Date		101,782,000	64
Allocation Requested for FY 1987		600,000	64
Scheduled Balance to Complete After FY 1987		0	
Unscheduled Balance to Complete After FY 1987		23,418,000 1/	

STATUS: (1 January 1986)

	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Granger Dam and Lake	100	May 1983
Entire North San Gabriel Dam and Lake Georgetown	100	Jan 1983
Entire South Fork Dam and Lake	0	1/ Unscheduled

1/ Construction of the South Fork unit is unscheduled pending reevaluation of this element. The reevaluation is scheduled to be completed February 1987.

Division: Southwestern

District: Fort Worth

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Region: Texas Gulf
San Gabriel River, Texas

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PHYSICAL DATA

	Granger Dam and Lake	North San Gabriel Dam and Lake Georgetown	South Fork Dam and Lake
Dam:			
Type	Rolled earth fill	Rock fill, impervious core	Rock fill, impervious core
Height	115 feet (Max above streambed)	164 feet (Max above streambed)	152 feet (Max above streambed)
Length	16,320 feet (with spillway)	6,700 feet (with spillway)	5,620 feet (with spillway)
Spillway:			
Type	Uncontrolled ogee	Broadcrested uncontrolled	Broadcrested uncontrolled
Length	950 feet	1,000 feet	500 feet
Design Capacity (Max pool)	318,600 cubic feet per second	284,000 cubic feet per second	147,300 cubic feet per second
Reservoir Capacity:			
Flood Control (Ultimate)	126,200 acre-feet 1/	87,600 acre-feet	45,700 acre feet
Water Supply (Ultimate)	73,900 acre-feet 1/	29,200 acre-feet	28,900 acre-feet
Sediment Reserve	44,100 acre-feet	14,000 acre-feet	8,000 acre-feet
Total	244,200 acre-feet	130,800 acre-feet	82,600 acre-feet
Relocations:			
Roads	7.2 miles ($1,924,000)	13.3 miles ($1,508,000)	1.0 miles (includes bridges) ($459,000)
Cemeteries, Utilities, and Structures	($476,000)	($74,000)	($120,000)

1/ Until South Fork Lake is constructed, assignment of storage at Granger Dam and Lake will be as follows: flood control, 162,200 acre-feet and water supply 37,900 acre-feet.

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PHYSICAL DATA (CONTINUED)

Lands:	Granger Dam and Lake	North San Gabriel Dam and Lake Georgetown	South Fork Dam and Lake
Acres			
Fee	13,589 acres	5,330 acres	4,200 acres
Easement	1,731 acres	645 acres	-
Total	15,320 acres	5,975 acres	4,200 acres
Type Improvement	Predominantly agriculture Typical farm units	Predominantly agriculture Typical farm units	Predominantly agriculture Typical farm units

JUSTIFICATION: The combination of Granger Dam and Lake, North San Gabriel Dam and Lake Georgetown, and South Fork Lake will provide flood protection to about 20,900 acres of land along the San Gabriel River. It will materially reduce flood damages to about 33,600 acres of land along the Little River below the mouth of the San Gabriel River and about 1,053,600 acres of land along the Brazos River below the mouth of the Little River. The lakes are an important unit in the Brazos River system. The maximum flood of record (September 1921) caused estimated damages of $8,358,000. A recurrence of this flood under present conditions of development and at current prices, would cause damages estimated at $73,593,000, of which $8,639,000 would be prevented by the combination of San Gabriel projects. The most recent flood occurred during September 1981, causing damages estimated at $2,332,000 all of which were prevented by the completed portion of the project. These damages at current development and October 1985 prices are estimated at $2,765,000. The lakes will provide storage for municipal, industrial, and other beneficial uses which will serve the water supply needs of the San Gabriel River watershed, as well as the lower Brazos River Basin where a need exists for good quality water. The dependable water supply yield of the three lakes is estimated to be 16.2 million gallons per day for Granger, 10.1 million gallons per day for Lake Georgetown, and 6.7 million gallons per day for South Fork. The average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$ 8,432,000
Water Supply	2,462,000
Recreation	2,275,000
Total	$ 13,169,000

FISCAL YEAR 1987: The requested amount will be applied as follows:

Engineering and Design	$ 522,000
Supervision and Administration	78,000
Total	$ 600,000

Funds requested above are required to continue design of the South Fork Dam and Lake.

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NON-FEDERAL COST: On Granger Lake and Lake Georgetown the local interests are required to reimburse the Federal Government for costs allocated to water supply storage. This reimbursement is currently estimated at $13,308,000 for Granger and $6,404,000 for Lake Georgetown, exclusive of interest and will be financed by local interest. The annual cost to local interest for maintenance, operation, and replacements for water supply is $183,000 for Granger and $176,000 for Lake Georgetown.

South Fork Lake - Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority leadership, local interests are required to pay all costs allocated to municipal and industrial water supply, presently estimated at $17,521,000 for construction and $103,000 annually for operation, maintenance, and major replacements; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $6,847,000, and bear all costs of operation, maintenance, and replacement of recreation facilities, presently estimated at $213,000 annually; pay thirty-five percent of the cost allocated to flood control, presently estimated at $9,832,000, and bear all cost of operation, maintenance, and replacements of flood control facilities presently estimated at $96,000 annually.

STATUS OF LOCAL COOPERATION: The Brazos River Authority, a State agency, has furnished assurances that it will contract for the future water supply at North San Gabriel Dam and Lake Georgetown and Granger Dam and Lake. These signed assurances were approved by the Chief of Engineers on 24 May 1968.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $125,800,000 is a decrease of $32,200,000 from the latest estimate ($158,000,000) submitted to Congress. This change includes decreases of $33,085,000 for South Fork Lake based on adjustments between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership and a decrease of $10,000 for Engineering and Design and Supervision and Administration based on final cost at Granger Lake. These decreases were partially offset by an increase of $813,000 for higher price levels and $82,000 for final contract cost on Granger Lake.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with Council on Environmental Quality on 27 March 1972. A Supplemental Environmental Impact Statement is being prepared for South Fork Lake. With the draft scheduled for completion in July 1986 and the final scheduled to be filed with Environmental Protection Agency in February 1987.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation Report signed by the District Engineer on 3 October 1977.

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OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1965 and for initiation of land acquisition only in FY 1968. Funds to initiate construction were appropriated in FY 1971 and allocated in FY 1972. In meetings held in 1966 with the Texas Water Rights Commission, Texas Water Development Board, and local congressmen, it was determined that water supply storage at the South Fork Lake was not needed and that construction of this project be deferred until the need developed. In a letter dated 7 August 1981, the Brazos River Authority acting as the State-approved local sponsor for water conservation storage in Federal reservoirs in the Brazos River Basin requested the Corps of Engineers to proceed with planning for construction of South Fork Lake as the last phase of the authorized San Gabriel project. Projections now indicate a need for immediate planning and action to meet the future water requirements of the area. Studies were initiated in FY 1982 to revise the General Design Memorandum on South Fork Lake for reaffirmation. Field investigations conducted in June 1984 revealed additional increases of flood control benefits. The San Gabriel River, as authorized, provided for reallocation of flood control storage from Granger Lake to South Fork Lake. Current investigations on South Fork Lake indicate that the most economical alternative for providing the additional water supply will be to raise the pool at Granger Lake.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Fort Worth

Project: San Gabriel River, Texas

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	53,100 (Jul 66)		158,000		125,800 2/
Reason for Change		(104,900)		(-32,200) 2/	
a. Price Escalation		69,178		813	
b. Design Changes		12,780		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		1,330		0	
e. Post-Contract Award and Other Estimating Adjustments		3,427		-33,013 1/	
f. Schedule Changes		0		0	
g. Sundry		801		0	
h. Real Estate		17,384		0	

1/ Includes an increase of $82 for final contract cost partially offset by a decrease of $10 for Engineering and Design and Supervision and Administration based on final cost of Granger Lake and a decrease of $33,085 for South Fork Lake based on adjustments between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and Senate Majority Leadership.

2/ Includes an increase of $813 for price levels for the South Fork Dam and Lake.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: RESERVOIRS (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO.	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1						
2	GRANGER DAM AND LAKE	62,062,000	62,062,000	-	-	-
3	NORTH SAN GABRIEL DAM AND	38,765,000	38,765,000	-	-	-
4	LAKE GEORGETOWN					
5	(Both of the above lakes are completed)					
6						
7	SOUTH FORK LAKE:					
8	LANDS AND DAMAGES	18,301,000	6,000	5,000	-	18,290,000
9	RELOCATIONS	579,000	-	-	-	579,000
10	RESERVOIRS	1,139,000	-	-	-	1,139,000
11	DAMS	30,037,000	-	-	-	30,037,000
12	ROADS	527,000	-	-	-	527,000
13	RECREATION FACILITIES	1,899,000	-	-	-	1,899,000
14	CULTURAL RESOURCE PRESERVATION	107,000	-	-	-	107,000
15	BUILDINGS, GROUNDS AND UTILITIES	495,000	-	-	-	495,000
16	PERMANENT OPERATION EQUIPMENT	242,000	-	-	-	242,000
17	ENGINEERING AND DESIGN	2,879,000	655,000	176,000	522,000	1,526,000
18	SUPERVISION AND ADMINISTRATION	2,968,000	90,000	23,000	78,000	2,777,000
19						
20	TOTAL SOUTH FORK LAKE	59,173,000	751,000	204,000	600,000	57,618,000
21						
22	GRAND TOTAL SAN GABRIEL RIVER					
23						
24	TOTAL APPLIED COST (Federal Funds	160,000,000	101,578,000	204,000	600,000	57,618,000
25	and Non-Federal Contributions)					
26	UNDISTRIBUTED COST (None)					
27	TOTAL PROJECT COST (Federal Funds	160,000,000	101,578,000	204,000	600,000	57,618,000
28	and Non-Federal Contributions)					
29	TOTAL COST (Federal Funds	160,000,000	101,578,000	204,000	600,000	57,618,000
30	and Non-Federal Contributions)					
31	UNDELIVERED ORDERS		4,000	-4,000		
32	TOTAL OBLIGATIONS		101,582,000	200,000	600,000	57,618,000
33						

EFFECTIVE DATE: 1 January 1986 | DIVISION: Southwestern | DISTRICT: Fort Worth, Texas | REGION: Texas Gulf | BASIN: Lower Brazos | PROJECT: SAN GABRIEL RIVER, TEXAS

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: RESERVOIRS (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (FB-1)

FISCAL YEARS 19 86 AND 19 87

LN NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1						
2						
3	FEDERAL FUNDS					
4	TOTAL APPLIED COST	125,800,000	101,578,000	204,000	600,000	23,418,000
5	Undistributed Cost (None)					
6	TOTAL PROJECT COST	125,800,000	101,578,000	204,000	600,000	23,418,000
7	Pending Adjustments (None)					
8	TOTAL COST	125,800,000	101,578,000	204,000	600,000	23,418,000
9	Undelivered Orders		4,000	-4,000		
10	TOTAL OBLIGATIONS	-	101,582,000	200,000	600,000	23,418,000
11						
12	NON-FEDERAL CONTRIBUTIONS					
13	TOTAL APPLIED COST	34,200,000	-	-	-	34,200,000
14	Undistributed Cost (None)					
15	TOTAL PROJECT COST	34,200,000	-	-	-	34,200,000
16	Pending Adjustments					
17	TOTAL COST	34,200,000	-	-	-	34,200,000
18	Undelivered Orders (None)					
19	TOTAL OBLIGATIONS	-	-	-	-	34,200,000
20						
21	METHOD OF FINANCING:					
22	FEDERAL FUNDS					
23	ALLOCATIONS	-	101,582,000	200,000	-	-
24	UNOBLIGATED CARRYOVER FROM PRIOR YEAR	-	-	-	-	-
25	TOTAL FUNDS AVAILABLE FOR OBLIGATIONS	-	-	200,000	-	-
26	APPROPRIATIONS REQUIRED	-	-	-	600,000	23,418,000
27						
28	NON-FEDERAL CONTRIBUTIONS					
29	CONTRIBUTIONS	-	-	-	-	-
30	UNOBLIGATED CARRYOVER FROM PRIOR YEAR	-	-	-	-	-
31	TOTAL FUNDS AVAILABLE FOR OBLIGATION	-	-	-	-	-
32	CONTRIBUTIONS REQUIRED	-	-	-	-	34,200,000
33						

EFFECTIVE DATE: 1 January 1986

DIVISION: Southwestern

DISTRICT: Fort Worth, Texas

REGION: Texas Gulf

BASIN: Lower Brazos

PROJECT: SAN GABRIEL RIVER, TEXAS

ENG FORM 1 SEP 76 2700 (FR 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: RESERVOIRS (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1						
2						
3	NON-FEDERAL COST					
4	CASH CONTRIBUTIONS	34,200,000	-	-	-	34,200,000
5	OTHER COST (None)	-	-	-	-	-
6						
7	TOTAL NON-FEDERAL COST	34,200,000	-	-	-	34,200,000
8						
9	TOTAL PROJECT COST FEDERAL (CORPS) COST	160,000,000	101,582,000	200,000	600,000	57,618,000
10	AND NON-FEDERAL COST					
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						

EFFECTIVE DATE: 1 January 1986

DIVISION: Southwestern

DISTRICT: Fort Worth, Texas

REGION: Texas Gulf

BASIN: Lower Brazos

PROJECT: SAN GABRIEL RIVER, TEXAS

ENG FORM 1 SEP 70 2700 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1985 732

APPROPRIATION TITLE: Construction, General - Multiple-Purpose Power Project

PROJECT: Town Bluff Hydropower, Texas

LOCATION: The existing Town Bluff Dam-B.A. Steinhagen Lake (formerly Dam "B" Lake) is in the Neches and Angelina Rivers Basin. The Town Bluff Dam is located at river mile 113.7 on the Neches River, about 12 miles below the confluence of the Angelina River.

AUTHORIZATION: River and Harbor Act of 1945 (Public Law 79-14), 2 March 1945.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 1.4 to 1 at 8 1/8 percent. The benefit-cost ratio was based on this project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum % of Est Appn Rqmts
Estimated Total Appropriation Requirement	$ 970,000		
Future Non-Federal Reimbursement	970,000		
Estimated Federal Cost (Ultimate)		0	
Estimated Non-Federal Cost		16,700,000	
Reimbursement - Hydropower	970,000		
Cash Contribution	15,730,000		
Total Estimated Project		$ 16,700,000	
Allocations to 30 September 1985		970,000	
Conference Allowance for FY 1986		0	
Allocation for FY 1986		0	
Allocations to Date		970,000	100
Allocation Requested for FY 1987		0	100
Scheduled Balance to Complete After FY 1987		0	
Unscheduled Balance to Complete After FY 1987		0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Power Plant	Not Started	Jul 1988

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Division: Southwestern

District: Fort Worth

Region: Texas Gulf
Town Bluff Hydropower, Texas

4 FEB 1986

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PHYSICAL DATA: The hydropower facilities would include a 6,000 kilowatt power plant (two units at 3,000 kilowatts each), intake and outlet facilities, and necessary switchyard equipment to be located in the main embankment at the old diversion channel. The project would produce an estimated 35,900 megawatt hours of energy per year.

JUSTIFICATION: The existing Town Bluff Dam-B.A. Steinhagen Lake (formerly Dam "B" Lake) project was started in 1947 and completed in 1951. Its purpose is to reregulate the releases from Sam Rayburn Dam and Reservoir (and Rockland Lake and Dam "A" Lake combination when constructed) and to provide head either for diversion into a canal or for a hydroelectric power plant. Assessment of today's energy situation indicates that installing hydropower at Town Bluff Dam is economically feasible. This purpose was deferred in the original construction. Detailed investigations resulted in a completed report in FY 1982 that recommended construction of the hydroplant facilities. The study addresses the tandem power operation of Sam Rayburn Dam and Reservoir and Town Bluff Dam-B.A. Steinhagen Lake. The average annual benefits, all hydropower, are $1,800,000 based on 1 October 1985 prices.

FISCAL YEAR 1987: No federal funds required. See STATUS OF LOCAL COOPERATION.

NON-FEDERAL COST: In accordance with project authorization, all costs currently estimated at $16,700,000 are allocated to power and are reimbursable to the Federal Government by the end of construction. Southwestern Power Administration, the Federal marketing agency, establishes system rate levels adequate to recover all capital investments costs for generating projects (including Corps generating projects) within a 50-year period and to repay annual operations, maintenance and replacements and interest expenses. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests have agreed to pay all costs associated with the project. The construction cost is currently estimated at $16,700,000 and costs for operation, maintenance and major replacements are estimated at $244,000 annually.

STATUS OF LOCAL COOPERATION: The Sam Rayburn Municipal Power Agency is the local sponsor and will provide cash contributions for the total cost of the project. Details of these arrangements are contained in the Three Party Agreements Between the United States of America; Sam Rayburn Municipal Power Agency and Southwestern Power Administration for the Town Bluff Hydropower, Texas, Project," and "Escrow Agreement for Construction of the Town Bluff Hydropower, Texas, Project." The Southwestern Power Administration has completed a third document, "Power Sales Contract Between United States of America and Sam Rayburn Municipal Power Agency. All documents were signed on 28 June 1985. The agreement includes making total cash contributions to an escrow account prior to construction.

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COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $970,000 is an increase of $230,000 from the latest estimate ($740,000) submitted to Congress. This increase is for Engineering and Design and Supervision and Administration based on reanalysis of requirements to complete plans and specifications prior to construction.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Assessment was included in the Detailed Evaluation Report dated March 1983 and approved 9 September 1983.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation Report signed by the District Engineer on 14 February 1983.

OTHER INFORMATION: Advance Engineering and Design was initiated in Fiscal Year 1984. In Fiscal Year 1986, plans and specifications are scheduled to be completed and initiation of construction is scheduled for May 1986. The sponsor will contribute all costs associated with the project and transfer the funds to an escrow account prior to construction.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Fort Worth, Texas

Project: Town Bluff Hydropower, Texas

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	17,400 (Oct 82)		740		970
Reason for Change		(-16,600)		(230)	
a. Price Escalation		1,197		0	
b. Design Changes		400		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimating Adjustments		-697		0	
f. Schedule Changes		0		0	
g. Sundry		-17,560		230 1/	
h. Real Estate		0		0	

1/ Increase of $230 for Engineering and Design and Supervision and Administration based on reanalysis of requirements.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: MULTIPLE-PURPOSE POWER PROJECT (Power Plant)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1						
2	POWER	14,665,000	-	2,400,000	8,300,000	3,965,000
3	ENGINEERING AND DESIGN	1,175,000	929,000	230,000	12,000	4,000
4	SUPERVISION AND ADMIN	860,000	21,000	153,000	488,000	198,000
5						
6						
7	TOTAL APPLIED COST (Federal Funds	16,700,000	950,000	2,783,000	8,800,000	4,167,000
8	and Non-Federal Contributions)					
9	UNDISTRIBUTED COST (None)					
10	TOTAL PROJECT COST (Federal Funds	16,700,000	950,000	2,783,000	8,800,000	4,167,000
11	and Non-Federal Contributions)					
12	TOTAL COST (Federal Funds	16,700,000	950,000	2,783,000	8,800,000	4,167,000
13	and Non-Federal Contributions)					
14	UNDELIVERED ORDERS		7,000	-7,000		
15	TOTAL OBLIGATIONS		957,000	2,776,000	8,800,000	4,167,000
16						
17	FEDERAL FUNDS					
18	TOTAL APPLIED COST	-	950,000	-		
19	Undistributed Cost (None)					
20	TOTAL PROJECT COST	-	-			
21	Pending Adjustments (None)		950,000	-950,000		
22	TOTAL COST	-				
23	Undelivered Orders (None)		7,000	-7,000		
24	TOTAL OBLIGATIONS		957,000	-957,000		
25						
26	NON-FEDERAL CONTRIBUTIONS					
27	TOTAL APPLIED COST	16,700,000	-	3,733,000	8,800,000	4,167,000
28	Undistributed Cost (None)					
29	TOTAL PROJECT COST	16,700,000	-	3,733,000	8,800,000	4,167,000
30	Pending Adjustments		-950,000	950,000		
31	TOTAL COST	16,700,000	-	3,733,000	8,800,000	4,167,000
32	Undelivered Orders		-	-		
33	TOTAL OBLIGATIONS		-	3,733,000	8,800,000	4,167,000

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 January 1986	Southwestern	Texas Gulf	TOWN BLUFF HYDROPOWER, TEXAS
	DISTRICT: Fort Worth, Texas	BASIN: Sabine-Neches	

ENG FORM 1 SEP 74 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: MULTIPLE-PURPOSE POWER PROJECT (Power Plant)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LN NO.	ITEM (a)	PROJECT COST ESTIMATE (b)	TOTAL TO 30 SEP 19 85 (c)	CURRENT FY 19 86 (d)	BUDGET FY 19 87 (e)	BALANCE TO COMPLETE AFTER FY 19 87 (f)
1						
2	METHOD OF FINANCING:					
3	FEDERAL FUNDS					
4	ALLOCATIONS	-	970,000	-970,000	-	-
5	UNOBLIGATED CARRYOVER FROM PRIOR YEAR	-	-	13,000	-	-
6	TOTAL FUNDS AVAILABLE FOR OBLIGATIONS	-	-	-957,000	-	-
7	APPROPRIATIONS REQUIRED	-	-	-	-	-
8						
9	NON-FEDERAL CONTRIBUTIONS					
10	CONTRIBUTIONS	-	-	3,733,000	-	-
11	UNOBLIGATED CARRYOVER FROM PRIOR YEAR	-	-	-	-	-
12	TOTAL FUNDS AVAILABLE FOR OBLIGATION	-	-	3,733,000	-	-
13	CONTRIBUTIONS REQUIRED	-	-	-	8,800,000	4,167,000
14						
15	NON-FEDERAL COST					
16	CASH CONTRIBUTIONS	-	-	3,733,000	8,800,000	4,167,000
17	OTHER COST (None)					
18	TOTAL NON-FEDERAL COST	-	-	3,733,000	8,800,000	4,167,000
19						
20	TOTAL PROJECT COST FEDERAL (CORPS) COST					
21	AND NON-FEDERAL COST	-	-	3,733,000	8,800,000	4,167,000
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 January 1986	Southwestern DISTRICT Fort Worth, Texas	Texas Gulf BASIN Sabine-Neches	TOWN BLUFF HYDROPOWER, TEXAS

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APPROPRIATION TITLE: Construction General - Dam Safety Assurance

PROJECT: Jemez Canyon Dam, New Mexico (Continuing)

LOCATION: The project is located on the Jemez River about 2 miles upstream from the confluence of the Rio Grande, Sandoval County, New Mexico.

AUTHORIZATION: Flood Control Acts of 1948 and 1950

BENEFIT-COST RATIO: The benefit-cost ratio is not applicable because monetary benefits have not been quantified.

SUMMARIZED FINANCIAL DATA

			Accum % of Est Fed Cost
Estimated Federal Cost:		$3,060,000	
Estimated Non-Federal Cost:		0	
Cash Contribution	0		
Other Costs	0		
Total Estimated Project Cost		3,060,000	
Allocations to 30 September 1985		0	
Conference Allowance for FY 1986		1,000,000	
Allocation for FY 1986		1,000,000	
Allocations to Date		1,000,000	33
Allocation Requested for FY 1987		2,060,000	100
Scheduled Balance to Complete After FY 1987		0	
Unscheduled Balance to Complete after FY 1987		0	

STATUS: (1 January 1986)

	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	0	Apr 1987
Relocations	0	Apr 1987
Dam	0	Apr 1987

PHYSICAL DATA

Jemez Canyon Dam was placed in operation for flood control in 1953. The reservoir storage capacity at the spillway crest is 110,450 acre-feet, consisting of 73,000 acre-feet for flood control storage and 37,450 acre-feet for sediment storage. The dam is an earthfill structure with a crest length of 780 feet. The crest width is 28 feet. The top of the dam is at elevation 5,257.5 feet mean sea level, approximately 135 feet above the streambed.

DIVISION: Southwestern DISTRICT: Albuquerque REGION: Rio Grande
Jemez Canyon Dam, New Mexico

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The recommended project modification plan to preclude overtopping of the dam embankment by the revised probable maximum flood is comprised of a spillway widening of 28 feet, an embankment raise of 14.1 feet, and a 3.0 foot high gabion wall at the upstream side of the dam crest for freeboard. The spillway modification, in concert with raising the embankment, will increase the peak discharge capacity of the spillway from 105,300 cfs to 319,000 cfs.

JUSTIFICATION: Modification of the project is necessary to provide adequate discharge capability and freeboard allowance to accommodate the revised probable maximum flood. The revised probable maximum flood is due to a change in probable maximum precipitation criteria. This changed criteria is the result of a review by the National Weather Service of the probable maximum precipitation used in the project design. The revised precipitation produces a probable maximum flood which, when routed through the existing spillway facilities, overtops the dam embankment by 11.5 feet for 13 hours. Overtopping of the embankment could cause failure of the embankment and uncontrolled release of a full reservoir. This would cause downstream catastrophic destruction, economic loss, and loss of life.

FISCAL YEAR 1987: The requested amount will be applied as follows:

Complete construction of dam and spillway modification	$1,744,000
Engineering and Design	158,000
Supervision and Administration	158,000
Total	2,060,000

The funds requested above are required to complete construction.

NON-FEDERAL COST: Not applicable.

STATUS OF LOCAL COOPERATION: Not applicable.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal Cost estimate of $3,060,000 is a decrease of $200,000 from the latest estimate ($3,260,000) submitted to Congress. The decrease is due to an adjustment in the inflation allowance through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: An Environmental Assessment resulted in a Findings of No Significant Impact. The Environmental Assessment and Findings of No Significant Impact are on file in Albuquerque District.

The provisions of Section 404 of the Clean Water Act do not apply because the project improvements do not involve the placement of fill material or the discharge of dredge material in the waters of the United States.

OTHER INFORMATION: Funds to initiate construction were appropriated in Fiscal Year 1986.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Albuquerque

Project: James Canyon Dam, New Mexico

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	3,260 1/ (Oct 84)		3,260 1/		3,060 1/ 2/
		(0)		(-200) 2/	
Reason for Change					
a. Price Escalation		0		-200	
b. Design Changes		0		0	
c. Additonal Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimating Adjustments		0		0	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		0	

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes a decrease of $200 in estimated inflation from 1 October 1985 through the construction period.

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Appropriation Title:
Construction, General

Classification:
Local Protection (Flood Control)

RCS: DAEN-CWB-13

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEAR 1986 - 1987

Item	Project Cost Estimate	Total to 30 Sep 1985	Current FY 1986	Budget FY 1987	Balance To Complete
Relocations	58,000	0	58,000	0	0
Dams	2,544,000	0	800,000	1,744,000	0
Engineering and Design	229,000	0	71,000	158,000	0
Supervision and Administration	229,000	0	71,000	158,000	0
Total Applied Cost (Fed)	3,060,000	0	1,000,000	2,060,000	0
Undistributed Cost (None)					
Total Project Cost (Fed)	3,060,000	0	1,000,000	2,060,000	0
Pending Adjustments (None)					
Total Cost	3,060,000	0	1,000,000	2,060,000	0
Undelivered Orders		0	0		
Total Obligations		0	1,000,000		
METHOD OF FINANCING					
Allocations					
Unobligated Carryover		0	1,000,000		
Total Funds Available for Obligations			0		
Appropriation Required			1,000,000		
				2,060,000	0

EFFECTIVE DATE
1 January 1985

DIVISION
Southwestern

DISTRICT
Albuquerque

REGION
Jemez

BASIN
Rio Grande

PROJECT
Jemez Canyon Dam, NM (DSA)

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APPROPRIATION TITLE: Construction, General - Dam Safety Assurance

PROJECT: Buffalo Bayou and Tributaries, Texas (Addicks and Barker Dams) (Continuing)

LOCATION: Addicks and Barker Dams are in close proximity to the towns of Addicks and Barker, Texas, which are within the northwestern boundaries of the City of Houston, Texas.

AUTHORIZATION: Addicks and Barker Dams were authorized for construction by the River and Harbor Act of 1938.

BENEFIT-COST RATIO: The benefit-cost ratio is not applicable because monetary benefits have not been quantified.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost
Estimated Federal Cost	$14,600,000	
Estimated Non-Federal Cost	0	
Total Estimated Project Cost	$14,600,000	
Allocations to 30 September 1985	0	
Conference Allowance for FY 1986	3,000,000	
Allocation for FY 1986	3,000,000	
Allocations to Date	3,000,000	21
Allocation Requested for FY 1987	4,900,000	54
Scheduled Balance to Complete After FY 1987	6,700,000	
Unscheduled Balance to Complete After FY 1987	0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	Not Started	Dec 1988
Addicks Dam	0	Dec 1988
Barker Dam	0	Dec 1988

PHYSICAL DATA

Addicks Dam was placed in operation for flood control in 1948. The reservoir flood control storage capacity is 204,500 acre-feet. The earthfill dam is 61,166 feet long and has a crest width of about 24 feet. The maximum height above the streambed is 49 feet. Barker Dam was placed in operation in 1945. The reservoir flood control storage capacity is 207,000 acre-feet. The earthfill dam is 72,844 feet long and has a crest width of about 24 feet. The maximum height above the streambed is 37 feet.

Division: Southwestern District: Galveston Region: Texas-Gulf Buffalo Bayou and Tributaries, Texas (Addicks and Barker Dams)

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The recommended project modification to prevent failure of structures in the event of a spillway design flood is to raise approximately 32,400 feet of Addicks Dam 1 to 3 feet and armorplate 10,400 feet of southwestern end and 8,400 feet of northeastern end. The recommended project modification is to raise approximately 57,600 feet of Barker Dam 3 to 5 feet and armorplate 11,700 feet of southwestern end and 2,800 feet of northwestern end.

JUSTIFICATION: The earthen dams were constructed of borrow material from the reservoirs and each dam had one gated and four ungated conduits. The dams were later modified by gating all five conduits. The dams presently provide flood protection to a highly developed urban area downstream of the dams; however, it has been determined that the dams may fail should a spillway design flood occur. Average annual benefits have not been quantified.

FISCAL YEAR 1987: The requested amount will be applied as follows:

Continue raising of main embankments of Addicks and Barker Dams	$3,730,000
Initiate armorplating of low ends (Addicks and Barker Dams)	800,000
Engineering and Design	70,000
Supervision and Administration	300,000
Total	$4,900,000

The funds requested above are required to continue construction, and meet the scheduled completion date.

NON-FEDERAL COST: Not applicable.

STATUS OF LOCAL COOPERATION: Not applicable

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $14,600,000 is a decrease of $400,000 from the latest estimate ($15,000,000) submitted to Congress. This decrease reflects an adjustment in the inflation allowance through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Assessment and Finding of No Significant Impact are to be completed in March 1986.

The provisions of Section 404 of the Clean Water Act do not apply, because the project improvements do not involve the placement of fill materials or discharge of dredge material into the waters of the United States.

OTHER INFORMATION: Planning was accomplished using Operations and Maintenance, General funds. Funds to initiate construction were appropriated in FY 1986.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Southwestern
District: Galveston

Project: Buffalo Bayou and Tributaries, Texas
(Addicks and Barker Dams)

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	$15,000 (Oct 84)		$15,000 1/		$14,600 1/ 2/
Reason for Change		(0)		(-$400) 2/	
a. Price Escalation		0		-$400	
b. Design Changes		0		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimating Adjustments		0		0	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		0	

1/Includes an allowance for estimated inflation through the construction period.
2/Includes a decrease of $400 for adjustments in estimated inflation allowance through the construction period.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Dam Safety Assurance

SUMMARY CONSTRUCTION PROGRAM (PB-1)
Fiscal Years 1986 and 1987

ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
DAMS	12,960,000	0	2,290,000	4,530,000	6,140,000
ENGINEERING AND DESIGN	679,000	0	540,000	70,000	69,000
SUPERVISION AND ADMINISTRATION	961,000	0	170,000	300,000	491,000
TOTAL APPLIED COST (Federal Funds Only)	14,600,000	0	3,000,000	4,900,000	6,700,000
Undistributed Cost (None)					
TOTAL PROJECT COST (Federal Funds Only)	14,600,000	0	3,000,000	4,900,000	6,700,000
Pending Adjustments (None)					
TOTAL COST (Federal Funds Only)	14,600,000	0	3,000,000	4,900,000	6,700,000
Undelivered Orders (None)					
TOTAL OBLIGATIONS		0	3,000,000	4,900,000	6,700,000
METHOD OF FINANCING					
Allocations		0	3,000,000		
Unobligated Carryover from Prior Year			0		
Total Funds Available for Obligation			3,000,000		
Appropriation Required				4,900,000	6,700,000

EFFECTIVE DATE 1 JANUARY 1986

DIVISION: SOUTHWESTERN
DISTRICT: GALVESTON

REGION: TEXAS-GULF
BASIN: TRINITY-GALVESTON BAY

PROJECT: BUFFALO BAYOU AND TRIBUTARIES, TEXAS, ADDICKS AND BARKER DAMS

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SOUTHWESTERN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation

a. Channels and Harbors.

The program request of $55,577,000 provides for essential maintenance work on 12 channel and harbor projects. The work to be accomplished under this activity consists of maintaining the navigation channels and harbors and anchorages of coastal harbors and waterways by means of dredging, construction of bulkheads, spoil disposal areas, snagging, repair channel stabilization works, operation and repair of navigation structures, and repairing harbor jetties, all as authorized in the laws adopting river and harbor projects.

	OBLIGATIONS			
Project	Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
Texas				
Brazos Island Harbor	88,900	1,442,000	2,920,000	Periodic dredging.
Channel to Aransas Pass	0	0	800,000	Periodic dredging.
Channel to Victoria	0	0	190,000	Periodic dredging.
Corpus Christi Ship Channel	3,221,900	4,170,000	2,730,000	Variation in dredging requirements.
Double Bayou	0	0	600,000	Periodic dredging.
Freeport Harbor	5,741,700	2,296,000	4,480,000	Variation in dredging requirements.
Galveston Harbor and Channel	2,145,300	6,370,000	1,640,000	Variation in dredging requirements.
Gulf Intracoastal Waterway	9,919,600	9,530,000	13,127,000	Variation in dredging requirements.

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SOUTHWESTERN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation (Cont'd)

a. Channels and Harbors. (Cont'd)

	OBLIGATIONS			
Project	Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
Texas (Cont'd)				
Houston Ship Channel	3,906,500	4,751,000	11,790,000	Variation in dredging requirements.
Matagorda Ship Channel	430,500	4,949,000	830,000	Variation in dredging requirements.
Sabine-Neches Waterway	6,027,800	7,796,000	14,310,000	Variation in dredging requirements.
Texas City Channel	1,345,900	1,740,000	2,160,000	Variation in dredging requirements.
Other Projects Maintained Periodically	323,800	602,000		
Total Channels and Harbors	33,151,900	43,646,000	55,577,000	

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SOUTHWESTERN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation (Cont'd)

b. Locks and Dams.

The program request of $20,433,000 provides for operational requirements and essential repairs on one project. Requirements include: operation and ordinary maintenance of the project facilities; labor, supplies, materials and parts required for the day-to-day functioning; and periodic maintenance, repairs, and replacements, and repair of canal stabilization works. The requested amount also includes application of special recreation use fees for recreation areas and recreational facilities at completed projects.

	OBLIGATIONS			
Project	Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
Arkansas				
McClellan-Kerr Arkansas River and Navigation System, Arkansas and Oklahoma	18,702,900	16,966,000	20,433,000	Bank stabilization in FY 85 and FY 87; clearing and snagging channel, and paint tainter gates at Mayo and Chouteau (Locks and Dams 14 and 17) in FY 87.
Total - Locks and Dams	18,702,900	16,966,000	20,433,000	
TOTAL - NAVIGATION	51,854,800	60,612,000	76,010,000	

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SOUTHWESTERN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control

a. Reservoirs.

The program request of $58,816,000 for the operation and maintenance of 68 projects and scheduling of flood control reservoir operations in the division provides the amount necessary for operational requirements. Annual requirements are for the operation and ordinary maintenance of project facilities, labor, supplies, materials, and parts required for the day-to-day functioning of the projects. The requested amount also includes application of special recreation use fees for recreation areas and recreation facilities at completed projects.

Project	OBLIGATIONS Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
Arkansas				
Blue Mountain Lake	655,900	658,000	714,000	
DeQueen Lake	672,000	841,000	600,000	Repair gate tower in FY 85 and FY 86; facilities to meet health and sanitation requirements for recreation areas in FY 86.
Dierks Lake	685,200	700,000	704,000	
Gillham Lake	627,200	731,000	602,000	Repair gate tower and facilities to meet health and sanitation require-ments for recreation areas in FY 86.
Millwood Lake	1,559,200	1,556,000	1,520,000	
Nimrod Lake	812,700	1,007,000	954,000	Facilities to meet health and sanitation requirements in recreation areas in FY 86; acquire land and flowage easements in FY 87.

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SOUTHWESTERN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs. (Cont'd)

Project	OBLIGATIONS Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
Colorado				
John Martin Reservoir	998,000	1,010,000	1,060,000	
Trinidad Lake	536,800	453,000	519,000	Survey boundary, construct fence and develop inundation maps/flood emergency plan in FY 85; periodic inspection in FY 87.
Kansas				
Council Grove Lake	874,600	728,000	702,000	Resurface project roads in FY 85.

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SOUTHWESTERN DIVISION

JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs. (Cont'd)

Project	OBLIGATIONS Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
Kansas (Cont'd)				
El Dorado Lake	355,300	390,000	415,000	Increased level of operational activities resulting from more fully developed project facilities in FY 87.
Elk City Lake	600,200	797,000	560,000	Resurface roads in FY 86.
Fall River Lake	798,000	977,000	645,000	Resurface dam site roads in FY 85 and FY 86.
John Redmond Dam and Reservoir	3,801,000	1,656,000	875,000	Embankment riprap repair in FY 85; repair roads in FY 85 and FY 86; contracting of total operation and maintenance services in FY 86 and FY 87.
Marion Lake	998,200	772,000	691,000	Install sanitary facilities in FY 85 and FY 86; resurface roads in FY 85.

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SOUTHWESTERN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs. (Cont'd)

Project	OBLIGATIONS Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
Kansas (Cont'd)				
Pearson-Skubitz Big Hill Lake	598,500	683,000	713,000	Upgrade sanitary facilities and resurface dam site roads in FY 86; repair project office compound in FY 87.
Toronto Lake	198,000	271,000	238,000	Repair embankment slide in FY 86; water quality study in FY 87.
Missouri				
Clearwater Lake	1,342,200	1,342,000	3,074,000	Construction of left abutment seepage berm in FY 87.
New Mexico				
Abiquiu Dam	2,244,500	1,183,000	1,063,000	Spillway modification in FY 85 and FY 86.
Cochiti Lake	1,016,600	956,000	1,273,000	Additional studies required for seepage problems in FY 87.

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SOUTHWESTERN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs (Cont'd)

Project	OBLIGATIONS Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
New Mexico (Cont'd)				
Conchas Lake	804,300	763,000	1,201,000	Initiate reconstruction of road and bridge for improved public safety in FY 87.
Galisteo Dam	133,900	118,000	141,000	Initiated reservoir filling/flood emergency plan in FY 85; periodic inspection in FY 87.
Jemez Canyon Dam	247,900	210,000	233,000	Structural design for dam safety and periodic inspection in FY 85; implement energy consumption audit and study energy conservation in FY 87.
Santa Rosa Dam & Lake	623,800	492,000	516,000	Reservoir filling plan in FY 85; periodic inspection in FY 87.
Two Rivers Dam	173,200	260,000	242,000	Reservoir sedimentation survey and periodic inspection in FY 86; increased water control management and repair of recreation facilities in FY 87.

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SOUTHWESTERN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs. (Cont'd)

Project	OBLIGATIONS Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
Oklahoma				
Arcadia Lake	0	105,000	79,000	First year operational in FY 86; increased local participation in project operation and maintenance in FY 87.
Birch Lake	667,400	566,000	593,000	Construct storage building in FY 85.
Canton Lake	1,705,600	1,371,000	1,133,000	Complete embankment protection test section in FY 85; repair roads in FY 86.
Copan Lake	517,900	507,000	449,000	Periodic inspections in FY 85 and FY 86.
Fort Supply Lake	617,400	615,000	616,000	
Great Salt Plains Lake	461,700	351,000	340,000	Resurface roads in FY 85.
Heyburn Lake	557,800	552,000	486,000	Resurface roads in FY 85 and FY 86.
Hugo Lake	1,193,600	1,156,000	1,095,000	

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SOUTHWESTERN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs. (Cont'd)

Project	OBLIGATIONS Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
Oklahoma (Cont'd)				
Hulah Lake	836,100	599,000	543,000	Paint sluice gates and repair embankment slides in FY 85; resurface roads in FY 86.
Kaw Lake	1,477,600	1,745,000	1,332,000	Repair sluice gate stems in FY 85; repair embankment in FY 86; resurface roads in FY 85 and FY 86.
Oologah Lake	1,172,800	1,163,000	1,240,000	
Optima Lake	446,500	511,000	496,000	Increase project surveillance and management activities in FY 86 and FY 87 caused by project filling of conservation pool; periodic inspection in FY 86.
Pensacola Reservoir - Lake O' the Cherokees	2,200	4,000	7,000	Increased maintenance and repairs of pumping plants in FY 86 and FY 87.
Pine Creek Lake	943,900	764,000	679,000	Resurface roads in FY 85 and FY 86.
Sardis Lake	456,800	609,000	548,000	Water quality study in FY 86; increased water control and analysis studies in FY 87.

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SOUTHWESTERN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs. (Cont'd)

Project	OBLIGATIONS Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
Oklahoma (Cont'd)				
Skiatook Lake	218,000	549,000	762,000	First year operational in FY 85; increased requirements for consolidated maintenance contract in FY 86; compliance and periodic inspections in FY 87.
Waurika Lake	726,600	882,000	927,000	Clean relief wells in FY 86; control water storage and releases, maintain equipment for water control operation in FY 87.
Wister Lake	739,000	711,000	486,000	Resurface roads and replace dam guardrail in FY 85; clean relief wells in FY 86.
Texas				
Aquilla Lake	326,700	470,000	441,000	Fully operational pool in FY 86 and FY 87.
Arkansas-Red River Basins Chloride Control (Area VIII)	0	491,000	461,000	First year operational in FY 86.
Bardwell Lake	776,900	1,141,000	743,000	Resurface park road in FY 86.

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SOUTHWESTERN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs. (Cont'd)

Project	OBLIGATIONS Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
Texas (Cont'd)				
Belton Lake	1,281,600	1,656,000	2,476,000	Catalog/protect archeological sites in FY 86; repair stilling basin in FY 87.
Benbrook Lake	1,345,200	1,209,000	1,080,000	Resurface project road in FY 85; construct sanitary facilities in FY 86.
Buffalo Bayou and Tributaries	1,184,600	940,000	650,000	Dam safety study in FY 85 and FY 86.
Canyon Lake	1,106,400	1,107,000	1,155,000	
Ferrell's Bridge Dam - Lake O'the Pines	1,401,200	2,017,000	1,606,000	Catalog/protect archeological sites and construct sanitary facilities in FY 86; paint gates in FY 87.
Granger Dam and Lake	1,213,300	878,000	1,174,000	Resurface project road in FY 85; resurface embankment road in FY 87.
Grapevine Lake	1,721,200	1,644,000	1,523,000	Repair recreation facilities in FY 85.
Hords Creek Lake	941,500	899,000	762,000	Resurface park roads in FY 85 and FY 86.

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SOUTHWESTERN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs. (Cont'd)

Project	OBLIGATIONS Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
Texas (Cont'd)				
Joe Pool Lake	0	268,000	351,000	First partial year operational in FY 86; full year operational in FY 87.
Lake Kemp	148,400	141,000	135,000	
Lavon Lake	1,552,900	1,895,000	1,895,000	Replace project equipment and recreation improvements in FY 86; resurface park road in FY 87.
Lewisville Dam	4,202,400	1,981,000	1,893,000	Repair project roads and construction of cost sharing recreation facilities in FY 85.
Navarro Mills Lake	1,070,100	952,000	855,000	Resurface park roads in FY 85; recreation improvements in FY 86.
North San Gabriel Dam and Lake Georgetown	942,300	1,145,000	919,000	Protection of archeological sites and recreation facility improvements in FY 86.
O. C. Fisher Dam and Lake	1,414,000	787,000	948,000	Resurface park road in FY 85; pave embankment road in FY 87.
Pat Mayse Lake	1,180,600	715,000	801,000	Resurface roads in FY 85; aquatic plant control and repair outlet channel in FY 87.

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SOUTHWESTERN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs. (Cont'd)

Project	OBLIGATIONS Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
Texas (Cont'd)				
Proctor Lake	1,078,200	1,048,000	942,000	Pave embankment service road in FY 85; paint tainter gates and improve sanitary facilities in FY 86.
Ray Roberts Lake	0	0	136,000	First year operational in FY 87.
Somerville Lake	1,811,400	1,621,000	1,985,000	Replace sanitary facility in FY 85; repair embankment erosion in FY 87.
Stillhouse Hollow Dam	839,700	1,058,000	1,035,000	Replace sanitary facilities in FY 86; replace project office roof in FY 87.
Waco Lake	2,087,100	1,784,000	1,431,000	Resurface park road and replace sanitary facilities in FY 85 and FY 86; reapir valve operating equipment in FY 86.
Wallisville Project - Trinity River	155,200	247,000	205,000	Rehabilitation of perimeter fence in FY 86; boundary monumentation in FY 87.
Wright Patman Dam and Lake	1,733,100	1,882,000	1,563,000	Embankment road and park road pavement in FY 85; erosion repair at spillway in FY 86.
Scheduling Reservoir Operations	469,500	608,000	585,000	Purchase of water control data equipment in FY 86; increased water control management and data collection activities in FY 86 and FY 87.
Total - Reservoirs	64,081,700	59,898,000	58,816,000	

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SOUTHWESTERN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

b. Channel improvement, inspection, and miscellaneous maintenance.

The program request of $574,000 provides for inspection of completed work and miscellaneous maintenance during the budget year, including maintenance of data collection and testing stations for potential control of chloride in groundwater.

Project	OBLICATIONS Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
Arkansas-Red Chloride Control Data Stations, Oklahoma, Kansas, and Texas	42,900	5,000		Plug injection well in FY 85; caretaker status and completion of project activities in FY 86.
Estelline Spring Experimental Project, Texas	4,200	7,000	7,000	Increase internal monitoring of project in FY 86 and FY 87.
Inspection of Completed Works	487,200	560,000	349,000	Increase surveillance and monitoring of protection system in FY 85 and FY 86
Inspection of Completed PL 99 Works	134,000	129,000	218,000	Increase inspections in FY 87 to insure compliance by local interests.
Total Channel Improvements, Inspections, and Miscellaneous Maintenance	668,300	701,000	574,000	
TOTAL - FLOOD CONTROL	64,750,000	60,599,000	59,390,000	

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SOUTHWESTERN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

3. Multiple Purpose Power Projects

The program request of $55,243,000 for the operation and maintenance of 18 multiple purpose projects, having a presently planned operation capacity of 1,703,000 kilowatts, provides the amount necessary for operation requirements. Annual requirements are for the operation and ordinary maintenance of project facilities, labor, supplies, materials, and parts required for the day-to-day functioning. The requested amount also includes application of special recreation use fees for recreation areas and recreation facilities at completed projects.

	OBLIGATIONS			
Project	Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
Arkansas				
Beaver Lake	2,556,500	3,021,000	3,520,000	Seepage investigations in FY 86 and FY 87.
Bull Shoal Lake	3,890,900	4,327,000	5,431,000	Rewind generators 5, 6, and 7 in FY 86, completing this work in FY 87.
Dardanelle Lock and Dam	3,541,700	3,753,000	4,849,000	Bank stabilization and acquire land and flowage easements in FY 87.
Greers Ferry Lake	3,198,400	3,479,000	3,765,000	Boundary line maintenance in FY 87.
Norfork Lake	2,239,000	2,407,000	2,932,000	Replace transformer circuit breakers switches and lightning arresters in FY 87.
Ozark-Jeta Taylor Lock and Dam	2,611,500	2,419,000	3,069,000	Bank stabilization in FY 87.

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SOUTHWESTERN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

J. Multiple Purpose Power Projects (Cont'd)

Project	OBLIGATIONS Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
Missouri				
Table Rock Lake	3,144,400	3,232,000	4,017,000	Replace generator excitation systems and acquire land and flowage easements in FY 87.
Oklahoma				
Broken Bow Lake	1,556,900	1,373,000	1,558,000	Resurface roads in FY 85; replace generator switch gear in FY 87.
Eufaula Lake	2,758,500	3,164,000	3,087,000	Mapping to settle real estate claim and encroachments in FY 86; increased power house maintenance in FY 87.
Fort Gibson Lake	2,679,200	3,119,000	2,461,000	Settle PCB litigation in FY 86.
Keystone Lake	2,980,900	2,882,000	2,362,000	Remove reregulation dam in FY 85 and FY 86.
Robert S. Kerr Lock and Dam and Reservoir	2,572,300	2,457,000	3,257,000	Paint tainter gates and replace side seal bolts in FY 87.
Tenkiller Ferry Lake	2,447,400	2,977,000	2,571,000	Conduct water quality study and replace boundary monuments in FY 86.

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SOUTHWESTERN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

3. Multiple Purpose Power Projects (Cont'd)

Project	OBLIGATIONS Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
Oklahoma (Cont'd)				
Webbers Falls Lock and Dam	2,289,000	3,178,000	2,622,000	Bank stabilization, resurface roads and paint draft tube gates in FY 86; resurface roads and dewater lock in FY 87.
Texas				
Denison Dam - Lake Texoma	6,196,100	5,454,000	4,304,000	Embankment riprap and excavate outfall ditches in FY 85. Resurface roads in FY 85 and FY 86.
Sam Rayburn Dam and Reservoir	2,586,800	2,407,000	2,872,000	Repair shoreline erosion in FY 87.
Town Bluff - B. A. Steinhagen Lake	774,900	1,041,000	716,000	Erosion repair in recreation areas in FY 86.
Whitney Lake	2,073,300	2,463,000	1,850,000	Recreation improvements in FY 85; increased recreation area and power plant maintenance in FY 86.
TOTAL - MULTIPLE PURPOSE POWER PROJECTS	50,097,700	53,153,000	55,243,000	

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SOUTHWESTERN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

4. Protection of Navigation

The program request of $4,226,000 provides for accomplishing the work essential to the administration and enforcement of specific laws enacted for the protection of navigation, particularly Section 10, River and Harbor Act, 1899; Sections 402 and 404, Federal Water Pollution Control Act Amendment of 1972; and Section 103, Marine Protection Research and Sanctuary Act of 1972, involving the issuance and review of permits for discharge into navigable waters; and project condition surveys on some projects for which maintenance is not scheduled in the budget year.

	OBLIGATIONS			
Project	Actual FY 85 ($)	Estimated FY 86 ($)	Estimated FY 87 ($)	Explanation of Major Changes
General Regulatory Function	4,495,800	4,574,000	4,166,000	Increased surveys in FY 85; increase in surveillance of reported violations and compliance inspections of permitted activities in FY 86.
Project Condition Surveys	54,000	62,000	60,000	Anticipated increase in condition surveys for unfunded projects
TOTAL - PROTECTION OF NAVIGATION	4,549,800	4,636,000	4,226,000	
GRAND TOTAL - SOUTHWESTERN DIVISION	171,252,300	179,000,000	194,869,000	

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Mr. BEVILL. I have several questions.

In order to save time, I will submit my questions to be answered for the record and recognize Congressman Watkins.

[The information follows:]

Questions Submitted by Congressman Bevill

LITTLE FOSSIL CREEK, TEXAS

Mr. BEVILL. Describe the Little Fossil Creek, vicinity of the Haltom City, Texas, study which is one of the 12 new studies proposed in the budget.

General HILMES. Sir, the study area will include all of Little Fossil Creek, which originates near the northern city limits of Saginaw, Texas, and flows southeasterly through Saginaw, Blue Mound, the northeast side of Fort Worth, and through Haltom City to its confluence with Big Fossil Creek, a tributary of the West Fork of the Trinity River. The reconnaissance phase study will consider the advisability of channel improvements, levees, and a combination of structural and nonstructural measures to resolve the flood problems, determine whether feasibility studies are warranted and identify local sponsors who are willing to cost share in the feasibility studies.

CLARKSVILLE, ARKANSAS

Mr. BEVILL. Explain the reason for reducing the scope of the Clarksville, Arkansas, study.

General HILMES. Sir, the reconnassiance phase of the study determined flood damage reduction measures along Greenbrier Creek were not economically feasible and that the study area had not net water supply needs through the year 2040. These findings, together with the recently constructed Soil Conservation Service channel improvement project on Blue Creek in south Clarksville, have reduced the feasibility study requirements.

FOUNTAIN CREEK AND TRIBUTARIES, NORTH OF PUEBLO, COLORADO

Mr. BEVILL. In connection with the Fountain Creek and Tributaries, North of Pueblo, Colorado study, the justifications indicate that several Section 205 study sites were discovered during the reconnaissance phase of this study. Will the cost of the Fountain Creek study be reduced as a result of these findings?

General HILMES. Sir, the study cost estimate was decreased $243,000 due to the decision to study several areas in the Fountain Creek watershed, above the City of Pueblo, under Section 205 authority.

PECOS RIVER AND TRIBUTARIES, NEW MEXICO (CARLSBAD AND ROSWELL)

Mr. BEVILL. $200,000 has been allocated to the Pecos River and tributaries, New Mexico study prior to FY 1986, but no funds are being allocated in FY 1986. Why are you resuming the study in FY 1987?

General HILMES. Sir, the House added $400,000 for this study in Fiscal Year 1985, an amount adequate to fully fund the reconnaissance phase. Early in the reconnaissance phase, specific unrelated flood problems were identified at Roswell and Carlsbad, New Mexico. Because of the mutually exclusive nature of the two areas and different non-Federal sponsors, the single study has been divided into two separate studies. In Fiscal Year 1986, the reconnaissance phase of both studies will continue with funds provided in Fiscal Year 1985. The funds requested for Fiscal Year 1987 will be used to initiate the feasibility phase on both studies, assuming the reconnaissance phase studies are favorable and study cost sharing agreements are signed by the non-Federal sponsors.

BRAZOS RIVER AND TRIBUTARIES, TEXAS

Mr. BEVILL. What is the reason for the apparent resumption of the Brazos River and Tributaries, Texas study?

General HILMES. Sir, the local sponsor, the Brazos River Authority, has requested studies be made to reevaluate problems on the Little, Leon, and Lampasas Rivers. The Fiscal Year 1987 funds would be used for economic, environmental, and engineering studies to ascertain the existence of these problems.

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COLORADO RIVER AND TRIBUTARIES, TEXAS

Mr. BEVILL. In connection with the Colorado River and Tributaries, Texas study, you state the cost of the study will increase by $70,000 to review the needs of the basin and for coordination. $5 million has already been allocated to this study—arean't the needs of the basin already known?

General HILMES. Sir, the study has been underway since 1959 and some of the areas in the basin have not been actively studied for several years. The $70,000 will be used to determine if there are problems which may have developed recently that should be addressed in the Division Engineer's Report for the basinwide study.

SAN JACINTO RIVER AND TRIBUTARIES, TEXAS

Mr. BEVILL. What type of alternatives are being considered in connection with the San Jacinto River and tributaries, Texas study?

General HILMES. Sir, during the reconnaissance phase of the study, clearing and snagging, channel enlargement, reservoirs, flood plain evacuation, and floodproofing along several streams within the basin are being considered. The studies have not yet identified alternatives to be carried into the detailed feasibility phase of the study.

WHITE RIVER BASIN, ARKANSAS AND MISSOURI AUTHORIZATION REPORT

Mr. BEVILL. Why is it necessary to transfer an additional $60,000 to the White River Basin, Arkansas and Missouri, authorization report investigation in Fiscal Year 1986?

General HILMES. Sir, the additional $60,000 transferred to the study in Fiscal Year 1986 is required to complete and document the reconnaissance phase of the study.

NORTH LITTLE ROCK (DARK HOLLOW), ARKANSAS

Mr. BEVILL. I note the B–C ratio for the North Little Rock, Dark Hollow, Arkansas project is presently 1.03 to 1. What is the outlook—will the ratio remain above unity?

General HILMES. Sir, current studies indicate the project costs can be reduced significantly without a significant reduction in benefits which would materially increase the benefit-to-cost ratio.

RIO GRANDE FLOODWAY, SAN ACACIA TO BOSQUE DEL APACHE UNIT, NEW MEXICO

Mr. BEVILL. Describe the Rio Grande Floodway, San Acacia to Bosque del Apache Unit, NM project, which is one of only two Advance Engineering and Design new starts in the budget.

General HILMES. Sir, this project, which consists of constructing a levee along the Rio Grande, was authorized for construction in the Flood Control Act of 1948. The authorized project would eliminate the continuing threat of destruction to the existing conveyance channel. The project extends from the upper end of the low-flow conveyance channel at the San Acacia diversion works to the lower end of the low-flow conveyance channel at the head of Elephant Butte Reservoir, a distance of about 58 miles. The plan of improvement would include the removal and replacement of the existing spoil bank levee which separates the low-flow conveyance channel from the cleared floodway of the Rio Grande. Construction of a levee designed to provide protection to the low flow conveyance channel, in lieu of the existing spoil bank levee which was essentially constructed by random placement of excavated material from the conveyance channel, is needed to protect the channel from Rio Grande flood flows. The total estimated project cost is $32,300,000, with a benefit-to-cost ratio of 4.0 to 1 at 8⅝ percent interest rate.

DOUGLASS LAKE, KANSAS

Mr. BEVILL. What is the status of the reformulation studies regarding Douglass Lake, Kansas?

General HILMES. Sir, funds provided in Fiscal Year 1986 are being used to continue reformulation studies to determine if the authorized Douglass Lake project can satisfy a larger portion of the water resource needs in the Walnut River Basin. These studies include the collection of base data; reevaluation of flood control, water supply, and recreation needs; water quality, engineering and economic evaluations; and the optimization of project purposes. Funds requested in Fiscal Year 1987 will

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be used to complete the General Reevaluation Report by September 1987. Preconstruction planning is scheduled for completion in June 1990.

CORPUS CHRISTI SHIP CHANNEL, TEXAS (1968 ACT)

Mr. BEVILL. How were you able to achieve a cost decrease of $21.2 million on the Corpus Christi Ship Channel project?

General HILMES. Sir, this change reflects decreases of: $1,519,000 in the estimated inflation allowance through the construction period; $11,300,000 based on receipt of a favorable bid on dredging of the channel from Beacon 82 through and including the Chemical Turning Basin; $7,015,000 for more detailed planning of construction, which resulted in a reduction in estimated dredging quantities of about 2.3 million cubic yards; and $1,885,000 due to a reanalysis of supervision and inspection associated with projected dredging requirements. These decreases were partially offset by an increase of $519,000 based on current appraisals of lands.

FREEPORT HARBOR, TEXAS (1970 ACT)

Mr. BEVILL. The justifications for the Freeport Harbor, Texas, project indicate that budgeted funds for that project won't be obligated until enactment of user fee legislation. The project was funded for construction in the FY 1985 Supplemental Appropriations Bill subject to certain conditions which expire on May 15, 1986. Assuming all the conditions are met, what legal justification is there for not proceeding with the project?

General HILMES. Sir, assuming there is no enactment of legislation specifying the requirements of local cooperation for water resources development and/or the establishment of user tariffs or other means of generating revenue to meet the Local Sponsor's financial requirements prior to 15 May 1986, the Supplemental Appropriations Act of 1985 still requires the signing of a binding agreement with non-Federal entities desiring to participate in project construction under terms and conditions acceptable to the Secretary of the Army. If the Local Sponsor is unable or unwilling to participate in the cost of the project under terms and conditions acceptable to the Secretary of the Army, this could be the basis for not proceeding with the project.

FOURCHE BAYOU IN THE VICINITY OF LITTLE ROCK, ARKANSAS

Mr. BEVILL. Describe the Fourche Bayou in the vicinity of Little Rock, Arkansas project, which is one of 19 new construction starts requested by the Administration.

General HILMES. Sir, the proposed plan of improvement included in the survey report, completed in 1980, provides for the construction of 4.6 miles of channel clearing and alteration of six bridges on Fourche Creek; 5.8 miles of channel clearing and alteration of six bridges on Rock Creek; and 1.5 miles of channel clearing and alteration of two bridges on Grassy Flat Creek. The total cost of this plan is about $29,600,000, including an allowance for future inflation, with a benefit-to-cost ratio of 2.1 to 1 at 8⅝ percent interest rate. The non-Federal share of this plan is $11,340,000 consistent with the cost sharing and financing concepts agreed to by the Administration and Senate Majority Leadership. This proposed plan of improvement may be modified somewhat, however, based on studies to date. Studies for the General Design Memorandum, scheduled to be completed in May 1986, indicate that the National Economic Development plan would include work along 0.8 mile of Rock and Grassy Flat Creek, and 4.9 miles of Fourche Creek. The total cost of this plan would be about $31,300,000, excluding an allowance for future inflation, with a benefit-to-cost ratio of 1.25 to 1 at 8⅜ percent interest rate. The non-Federal share is about $16,600,000. The Fourche Bayou project requires authorization prior to initiation of construction.

Mr. BEVILL. The project has not been authorized—isn't it unusual to request funding for an unauthorized project?

General HILMES. Sir, all of the projects recommended for intiation of construction in Fiscal Year 1987 in the Southwestern Division are urgently needed. They have been included in the budget request on the basis that they are either authorized or included in the House and Senate authorization bills. The Corps Fiscal Year 1986 budget request also included several unauthorized projects on this same basis.

NEW CONSTRUCTION STARTS

Mr. BEVILL. I note you are requesting funds to start construction on two additional projects—Great Bend and Halstead, Kansas. Describe each project and indicate the urgency of starting these projects at this time.

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GREAT BEND, KANSAS

General HILMES. Sir, the Great Bend, Kansas project, authorized in the Flood Control Act of 1965, is a system of levees and channels being designed to reduce the flood damages that occur frequently in the city. Most recently, the June 1981 flood resulted in damages of $45.7 million. Major features of this local protection project, as authorized, consists of a total of 8.6 miles of leveed channel west of Great Bend to divert the Walnut and Little Walnut Creeks flood flows into the Arkansas River upstream of the city; 6 miles of improved channel with levees downstream along the Arkansas River from the confluence of the Walnut Creeks' diversion with the Arkansas River; and 7.3 miles of a tieback levee upstream along the north bank of the Arkansas River. The total estimated cost of this plan is about $59,300,000, including an allowance for inflation during the construction period, of which $43,500,000 would be Federal costs and $15,800,000 would be non-Federal costs, consistent with the cost sharing and financing concepts agreed to by the Administration and Senate Majority Leadership. The benefit-to-cost ratio is 6.0 to 1 at 3¼ percent interest rate. This project is urgently needed to protect the Great Bend area from major damaging floods that could occur at any time. Construction is scheduled for completion in Septmeber 1991.

HALSTEAD, KANSAS

Sir, the Halstead, Kansas project, for which funds are requested in Fiscal Year 1987, will require authorization prior to initiation of construction. The project, which consists of about four miles of earthen levees and 3.6 miles of channel modifications along the Arkansas River, has an estimated cost of $7,750,000, including an allowance for inflation during the construction period. Consistent with the cost sharing and financing concepts agreed to by the Administration and Senate Majority Leadership, the Federal cost would be $5,812,000 and the non-Federal cost would be $1,938,000. The benefit-to-cost ratio is 1.8 to 1 at 8⅝ percent interest rate. The flood of record occurred at Halstead in October 1973, and the second highest flood of record occurred in October 1979. It is estimated that damages of $15,200,000 would occur with a 100-year frequency flood. This project is urgently needed to protect the Halstead areas from floods similar to those previously experienced. Construction is scheduled for completion in September 1989.

EL PASO, TEXAS

Mr. BEVILL. The justifications indicates you are reformulating and reevaluating portions of El Paso, Texas project. Why is this necessary?

General HILMES. Sir, the originally authorized plan of improvement for the Southeast Area requires modification in order to be implemented. The Southeast Area is experiencing rapid urban development which has significantly changed the hydrology of the project area and the availability of required real estate for the authorized plan.

Mr. BEVILL. How does the cost compare with the original plan?

General HILMES. Sir, the estimated total cost of the authorized Southeast Area plan at October 1985 price levels would be $28,795,000. Studies to date indicate the modified plan, also at October 1985 price levels, would have a total cost of about $63,000,000. Neither of these estimates include an allowance for future inflation during the construction period.

LAKE WICHITA, HOLLIDAY CREEK AT WICHITA FALLS, TEXAS

Mr. BEVILL. Included in the non-Federal portion of the cost of the Lake Wichita, Holliday Creek at Wichita Falls, Texas project is $2.4 million for dam safety. Would you explain?

General HILMES. Sir, the Lake Wichita Dam has been inspected under the National Dam Safety Program and is considered safe for normal inflows, but could fail due to overtopping when subjected to the large floods the watershed is capable of producing. Such failure could result in castastropic damages. Corrective measures to prevent dam failure are included in the recommended plan for Lake Wichita, Holliday Creek and are the responsibility of the non-Federal sponsor. The total non-Federal cost, including an allowance for estimated inflation through the construction period, for making the existing Lake Wichita Dam safe is $3.1 million. This amount includes $700,000 for lands, easements, and rights-of-way and $2.4 million in acutal construction costs. The top of the dam will be raised approximately 10 feet and a new spillway and outlet works constructed. This measure will allow the dam to

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meet the State of Texas dam safety criteria of containing the Probable Maximum Flood without overtopping.

RAY ROBERTS LAKE, TEXAS

Mr. BEVILL. What is the nature of the post authorization change report involving the Ray Roberts Lake, Texas project?

General HILMES. Sir, the report recommends a Greenbelt Corridor in lieu of development of the authorized recreation facilities at the existing Lewisville Lake. The Greenbelt Corridor will consist of about 1,100 acres of land in its natural state along approximately 10 miles of the Elm Fork of the Trinity River, which connects Ray Roberts Lake to Lewisville Lake, and will provide hiking trails and canoeing opportunities. The estimated cost of construction for these facilities is about $3,000,000, excluding an allowance for estimated inflation through the construction period, which will be cost shared on a 50-50 basis with the local sponsor. The Texas Parks and Wildlife Department has indicated they will assume reponsiblility for all operation, maintenance and replacement costs associated with the Greenbelt.

SAN GABRIEL RIVER, TEXAS

Mr. BEVILL. Last year's justification indicated a completion date of September 1985 for the reformulation of the South Fork Unit of the San Gabriel River, Texas project. Why has the date now slipped to February 1987?

General HILMES. Sir, the previously scheduled date for reformulation was based on the assumption that the authorized South Fork Lake project would be the one recommended for construction. Studies to date, however, indicate the most viable plan may be the reallocation of storage at the existing Granger Lake project. Consideration of this alternative will require additional studies and has resulted in a revision in the schedule of completion of the formulation studies to February 1987.

Mr. BEVILL. Explain the decreased project cost of $33 million.

General HILMES. Sir, $33,075,000 of the decrease of $33,085,000 in the Federal cost associated with the project reflects an adjustment between estimated Federal and non-Federal costs consistent with the cost sharing and financing concepts as agreed to by the Administration and Senate Majority Leadership for the remaining element of this project to be constructed, South Fork Lake.

WALLISVILLE LAKE, TEXAS

Mr. BEVILL. What is the status of the Wallisville Lake, Texas project?

General HILMES. Sir, the final testimony in the trial on the merits of having the injunction lifted was given in District Court on 26 November 1985. A decision on the merits of having the injunction lifted has not been made. Preparation of the plans and specifications for the non-overflow dam is underway and they are scheduled for completion in March 1986. Initiation of construction, however, must await removal of the injunction.

OPERATION AND MAINTENANCE

Mr. BEVILL. The 1987 budget reflects a $16 million increase in O&M compared with the 1986 appropriation. What accounts for the increase?

General HILMES. Sir, the increase for operation and maintanence is primarily due to an increase of $12,000,000 required as a result of increased dredging of our channels and harbors along the Gulf Coast caused by shoaling in the Houston Ship Channel and the Sabine-Neches Waterway. Approximately $4,000,000 is required to provide bank stabilization, gate painting, and maintenance for the McClellan-Kerr Arkansas River Navigation System in Oklahoma and Arkansas and those multiple-purpose projects associated with the navigation system. The requiremen' for bank stabilization has resulted from repeated high river flows and the gate painting is a periodic requirement.

Mr. WATKINS. Thank you, Mr. Chairman.

Mr. BEVILL. Mr. Watkins is very interested in this area.

Mr. WATKINS. I appreciate you and the Ranking Member, Mr. Myers, for allowing me to have this opportunity to ask some questions and, John, I want you to know not one of those construction projects was in my district.

Mr. MYERS. How did they miss you?

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Mr. WATKINS. We have been studying for ten years but haven't got around to getting any construction yet. I have got to get around to that one of these days, I hope. We were hoping we would have one this year.

General, I want to welcome you here, you and your entire staff. As you well know, I have a very keen interest in the entire southwest area and want to try to always be helpful to my colleagues in the adjacent States within the Southwestern Division.

PARKER LAKE, OK

I do have a keen interest in Oklahoma. I have a very personal interest in the third district of Oklahoma. I am frustrated and I am quite worried. Last week I inquired about Parker Lake, which I know you are quite familiar with, Mr. Chairman, and when talking to General Hatch, I realized, that they were expecting only about 22 out of the 41 new starts to have some upfront financing or possibly reach their agreements and still the possibility of some others, but one out of 41 they had requested no money to move forward, to begin even though Congress took action to authorize Parker Lake in the supplemental appropriation.

I know you are familiar with those facts but somewhere along the line the policy, not the law, has been set that there is no Federal interest in Parker Lake.

You know, surprisingly, they have ignored the Congress, this committee and the subcommittee. Congress obviously feels there is a Federal interest in building the Parker project. Let me ask you, General, do they feel there is no Federal interest because they have concluded that it is a single purpose project and they are not taking into consideration the flood control benefits; is that your interpretation?

Have they discussed that with you?

General HILMES. Sir, as I understand it, Parker Lake is predominantly a water supply project with incidental flood control and, therefore, is more appropriately funded by non-Federal interests than by the Federal Government.

Mr. WATKINS. Well, that is all fine and good if the local sponsor is one that has a high tax base and a high user situation so that you can get the upfront financing, but that is what I have tried to explain to some of your immediate supervisors. There is no way an economically depressed, sparsely populated part of the country can meet these kinds of requirements.

So basically what the policy is, is just to shut down water development unless you have the wealth to do the job. It does not matter if there is a need. This whole policy has changed. It is completely changed by people in higher positions than you occupy, and I know you are basically accepting the direction that is being handed down, but I feel that the subcommittee shares my concern about this and we are going to try to pursue it because it has been very hard this past weekend for me to be home—I just got here a little bit before one o'clock—to try to explain to the people what happened except I just have to tell them the whole truth of the situation.

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Let me ask you this question now. H.R. 6 contains the authorization for Parker Reservoir. Under the situation that exists—and I understand it is going to be over in the Senate, John, that the Senate will have Parker Lake in their bill also—what will happen if we put the project in there? Will this continue to be ignored or do you know?

General HILMES. I would have trouble addressing that, sir. From the Division's point of view we can only move forward on Parker if we receive funds and so, if you should put Parker in a bill, I still can't move forward until I actually receive funds and the authority to spend those funds, in the division.

Mr. WATKINS. I understand that. I understand that is up in the Secretary's office and also in OMB, but I will surely be asking this subcommittee and the full committee for its support.

Now, you have received money for the CP&E on Parker?

General HILMES. Yes, sir, I have received an allocation of $600,000 for fiscal year 1986.

Mr. WATKINS. I have been told by the Secretary that all the engineering design and all that will be available to be utilized by either other agencies or private sources. Will the available money that you have complete all this planning and engineering or will you require additional money?

General HILMES. Sir, as far as planning and engineering activities on Parker Lake, we have sufficient funds to complete key CP&E activities. As you mentioned, we will work with the local sponsors and make sure the concepts and plans we develop, as we close our CP&E activity phase, will be in the most useful configuration as is possible for their purpose.

Mr. WATKINS. Do you expect to complete the CP&E this year?

General HILMES. Basically, we do expect to complete the GDM sir, and the completion date for this document is July 1986.

Mr. WATKINS. You should have it all finished by July so we can decide which way we should go, either Corps or the Bureau or some private entity which I think is basically impossible.

ARKANSAS RIVER AND TRIBUTARIES, SOUTH CENTRAL AND SOUTHEAST AREAS OF OKLAHOMA, COMPREHENSIVE STUDY

RED RIVER BASIN, AR, TX, LA, AND OK COMPREHENSIVE STUDY

Let me turn to the two feasibility studies. Assistant Secretary of the Army, Bob Dawson, said in testimony last week that these two studies would be conducted at full Federal expense pursuant to the language that was contained in the House Report 98-755, accompanying P.L. 98-360. Is this your understanding, also?

General HILMES. Yes, sir. that is my understanding.

Mr. WATKINS. I want to make sure there is not any communication problem.

Now, are the funds requested in the fiscal year 1987 budget for these two studies equivalent to the Corps' capability for them?

General HILMES. Sir, the additional capability for each of these two studies is still under consideration. I will have to furnish this information for the record.

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Mr. WATKINS. Let me ask you two other questions along this line. When do you expect these two studies to be completed?

General HILMES. The Red River Basin Comprehensive Study, sir, will be completed in March of 1989 and the South Central and Southeast Areas of Oklahoma Comprehensive Study will be completed in December of 1988.

Mr. WATKINS. Well, I was under the interpretation both these would be finished by December 1988.

General HILMES. No, sir. We had the Red River Basin Comprehensive Study scheduled for September 1988 last year but it has slipped to March 1989.

Mr. WATKINS. I don't understand it. What does it take to get the fast track on this so we can get them finished some time in the fall of 1988, both of them?

General HILMES. Sir, we are working actively on these studies and we are working very hard. As you may recall, the reason we got off to a slow start was because in fiscal year 1986 when we submitted our budget request for these comprehensive studies, we were expecting matching funds from the local sponsors.

Mr. WATKINS. Why were you expecting that, General?

General HILMES. Because this was the policy for all new feasibility studies at the time the budget was prepared.

Mr. WATKINS. It was not the law. Was it the law?

General HILMES. What happened, sir, was we prepared our budget request in accordance with the policy that cost sharing with local interests would be required on the feasibility phase of these studies. However, the decision was made later to fund these studies with Federal funds but the total amounts needed in fiscal year 1986 were not made available.

Mr. WATKINS. But the Secretary agrees, everybody agrees these are federally funded studies. Now, what does it take to get it back on schedule? I would like the answer to be made part of the record. I would like to know what it takes for us to get these studies finished by October of 1988? I just cannot for the life of me understand why we have to take until 1989 or later.

I would like to see what we can do, what is necessary. I know there was a dispute, General, about the dollars, but it looks like we can fast track these and maybe get them ready to go.

General HILMES. Sir, I will provide that for the record.

[The information follows:]

CORPS OF ENGINEERS FUNDING CAPABILITIES FOR FISCAL YEAR 1987 [1]

Name of survey	Capability	Purpose of additional capability
Arkansas River and Tributaries South Central and Southeast Areas of Oklahoma Comprehensive Study.	$750,000	Advance study completion 3 months.[2]
Red River Basin, Arkansas, Texas, Louisiana and Oklahoma Comprehensive Study.	1,150,000	Advance study completion 6 months.[2]

[1] Although project and study capabilities reflect the readiness of the work for accomplishment, they are in competition for available funds and manpower Army-wide. In this context, the Fiscal Year 1987 capability amounts shown consider each project or study by itself without reference to the rest of the program. However, it is emphasized that the total amount proposed for the Army's Civil Works Program in the President's Budget for Fiscal Year 1987 is the appropriate amount consistent with the Administration's assessment of national priorities for Federal investments and the objectives of avoiding large budget deficits and the serious adverse effect that government borrowing is having on the national economy. Therefore, while we could utilize additional funds on individual projects and studies, offsetting reductions would be required in order to maintain our overall budgetary objectives.

[2] Receipt of the stated capability amounts will permit the completion of both studies in September 1988 which is the previously scheduled completion date for the Red River Basin, Arkansas, Texas, Louisiana and Oklahoma Comprehensive Study. The schedule for the Arkansas River and Tributaries, South Central and Southeast Areas of Oklahoma Comprehensive Study is being delayed six months from the previously scheduled completion date to permit the most effective coordination possible between these two studies.

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ARKANSAS-RED RIVER BASIN CHLORIDE CONTROL, OK AND TX
(REMAINING RED)

Mr. WATKINS. If you will provide that for the record, that will be acceptable. I want to ask another question. The Chairman has been to Oklahoma to see the chloride control project on the Red River and we think this has tremendous benefits, not just for Oklahoma but for the entire northern part of Texas, which is as you know, one of the fastest growing areas in the United States.

I have a lot of concern being expressed to me on the north side of that river in Oklahoma and I have been receiving inquiries by some of the Congressmen on the south side of the river in Texas. They are wanting to get together and we plan to try to have a meeting here in the next two or three weeks about what went wrong with the commitment that the Federal Government made to the local people, that if the local people, the States of Oklahoma and Texas, put up the money to take care of the man-polluted areas, the Federal Government would take care of the natural pollution in the Red River with the chloride control project.

The States and the local people have fulfilled their commitment. What direction are you being given on this chloride control project and are you planning to move forward without any additional dollars? Are you requiring something that was not in the agreement?

General HILMES. Sir, as you may recall when we made the trip and looked at the project sites, met with the local sponsors and the people in the area, it was explained at that time that for this project to proceed we would have to have cost sharing.

Mr. WATKINS. We did meet the cost sharing. The agreement was made and signed, the locals and States met that agreement. Now, the Federal Government, their government, Uncle Sam has backed up on its word and our farmers are not in the best economic condition to say the least, whether it is in Indiana, Alabama, or Oklahoma and now they are coming back and saying we want more money out of you.

They have broken their word. Our Government has broken its word to those farmers and the people who over these years have had all the faith and trust in their Government.

Now, some of the metropolitan areas might be able to help, but they are not going to be able to come forth with additional money.

General HILMES. I believe both the local people and the Government have made substantial investments in that project. As you know, area eight is 99 percent complete. but with respect to——

Mr. WATKINS. Speaking of area eight now, what other areas are you moving forward on this year in fiscal year 1987?

General HILMES. We are nearing completion of area eight. However, no other work has been started, sir.

Mr. WATKINS. Area nine?

General HILMES. No, sir, none has been initiated.

Mr. WATKINS. Area seven? Any of the other areas?

General HILMES. No, sir, a recommendation to proceed with construction of the other areas can not be made until we work out the

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cost sharing between the Federal Government and the local sponsor in accordance with current policy.

Mr. WATKINS. I can assure you the Oklahoma delegation will be responding to the local people because they are up in the air over there and I am getting feedback again from Texas, so we will probably be trying to reach some conclusion. We hope to meet the needs of the people in that area. Let me turn to another subject.

TUSKAHOMA LAKE, OK

Mr. WATKINS. As you well know, Tuskahoma Lake has been authorized a long time in my district and again there is no construction on it, but it seems to be a very feasible project. Now, you have sidetracked Parker, we hope temporarily. What are your plans for Tuskahoma Lake?

General HILMES. Sir, Tuskahoma is being studied as part of the Red River Basin Comprehensive Study. It is one of the elements that will be analyzed for possible recommendations as a multipurpose project.

Mr. WATKINS. That has a pump-back hydropower system connected with it?

General HILMES. With respect to the Red River Basin Comprehensive Study, we will be considering hydropower, including the potential for a pump-back system along with other purposes at the Tuskahoma site, sir.

Mr. WATKINS. When do you expect that phase of the comprehensive study to be finished?

General HILMES. I don't have the specific studies broken out for project sites such as Tuskahoma. The whole study will be completed, as I mentioned earlier in March of 1989.

Mr. WATKINS. Are you open to having some of these proposed project sites broken out and worked on in the same time frame? It looks like this could be done as efficiently as trying to look at the whole situation.

General HILMES. Sir, we can certainly work with you on that. An interim report on the Tuskahoma site, assuming economic feasibility is apparent, could be initiated and is perhaps the most expeditious method available for completing the study of this site.

Mr. WATKINS. I would like to think we could move forward on this one instead of having to wait. I surely don't want to plan on March of 1989. I hope the subcommittee here will help me and we can get this thing through before then.

SARDIS LAKE, OK, DAISY ACCESS ROAD

Mr. WATKINS. I would like to ask two more questions and we will wrap up my share of the questioning. You have a Sardis Lake Road that is to be built. How much money was appropriated by this committee, making sure we get all of our figures all straight, and will all agreements be completed and the funds obligated and contracted for this year?

General HILMES. In Fiscal Year 1986, $5 million was appropriated and that is our work allowance for the year to date. These funds will be used toward construction of the Daisy access road at Sardis Lake which, I believe, is the road you are talking about.

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Mr. WATKINS. What happened to the other five million?

General HILMES. From the fiscal year 1985 Appropriation Act, sir?

Mr. WATKINS. Yes.

General HILMES. Sir, that was assigned to savings and slippage.

Mr. WATKINS. I was promised and I would like the committee to hear this, Mr. Chairman, Mr. Myers, it was stated right there in that same chair you are sitting in, that five million dollars would be made available for this road. This committee appropriated $10 million for that road and 50 percent of it has been taken through savings and slippage. I don't understand.

General HILMES. Sir, at the time the five million dollars for fiscal year 1985 was appropriated, the road had not been authorized by the Congress. Consequently, the funds could not be used and they were assigned as savings and slippage.

Mr. WATKINS. There was an agreement that when it was authorized the five million dollars would be used. The 1985 supplemental authorized that ten million dollars, General.

General HILMES. Sir. When these funds are required, we will, assuming there are surplus funds on other Corps of Engineers projects, request replacement of that five million dollars.

SARDIS LAKE, OK, DAISY ACCESS ROAD

Mr. WATKINS. I would like to see us get some agreement worked out on it so we know it has been done. When do you plan to start construction on that road?

General HILMES. Sir, we will start construction with an initial contract that is scheduled for award in June of this year. Let me go back and clarify my previous statement. The improvements to the road were not authorized until August 1985. It was not the money itself. It was the improvements that were not authorized at the time the funds were appropriated which is why the five million dollars was assigned to savings and slippage.

Mr. WATKINS. I really question what happens along the way when somewhere, I don't know where that decision is made, and I assume maybe it is not in your shop, but is that decision made in your shop?

General HILMES. No, sir. On projects where there is no congressional authorization to expend appropriated funds, assignment of these funds to savings and slippage is made by higher authority.

Mr. WATKINS. We had the congressional authorization and we appropriated the money. We appropriated a full ten million dollars, but where is the decision as to slippage made? General Hatch, would you like to comment on that?

General HATCH. Sir, our total estimated cost of the road project is $10 million. We have the ten million dollars, as you have indicated; $5 million has been allocated to the Tulsa District and $5 million is available for allocation in my office, and that will all be spent, although the information I have shows——

Mr. WATKINS. On that road?

General HATCH. Yes, sir, these funds will be used for construction of the Daisy access road at Sardis Lake.

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Mr. WATKINS. I am getting gun shy. Every time I turn around, it seems like something else happens. Do you feel we can get this road under way and built?

General HATCH. We can, although I would like to verify the construction schedule for initiation and completion of this work and the associated funding requirements. Ten million dollars is the estimated cost of the road. Congress has given us ten million dollars and we will spend these funds on the road.

Mr. WATKINS. I would appreciate some response in writing on this particular situation. What is the schedule?

General HILMES. We are scheduled to award the first contract in June of 1986, sir.

Mr. WATKINS. When do you expect it to be completed? You have got the full ten million. When do you think it will be completed?

General HILMES. The initial contract is for the first phase of the road, sir. I will have to provide the completion date for this contract and for the whole road for the record.

Mr. WATKINS. Would you do that for us? I appreciate it.

[The information follows:]

SARDIS LAKE, OKLAHOMA

Assuming a minimum of two contracts for the Daisy Access Road, the first contract could be awarded in June 1986 for approximately $500,000 with scheduled completion in June 1988. The second contract could be awarded in July 1987 for approximately $8,750,000 with scheduled completion in September 1989.

WISTER LAKE, OK, DAM SAFETY ASSURANCE

Mr. WATKINS. The Chairman has also visited Wister Lake. When do you expect the modifications on Wister Lake to be done? What is the status of the dam study program on Wister Lake?

General HILMES. Sir, I will have to provide a schedule for the rehabilitation work for the record as I don't have that schedule with me.

Mr. WATKINS. If you could, I would appreciate that on Wister Lake.

[The information follows:]

WISTER LAKE, OKLAHOMA

The Wister Lake Major Rehabilitation Program Reconnaissance Report is about 90 percent complete and is scheduled to be submitted in March 1986. The Feature Design Memorandum and Environmental Impact Statement are scheduled for completion in 1988 and the plans and specifications are scheduled for completion in 1989. The earliest date that construction could start is 1990. The construction work would take about four years.

DENISON DAM-LAKE TEXOMA, TX AND OK

Mr. WATKINS. I have a number of questions on Lake Texoma. The Texas people as well as Oklahoma wanted me to inquire about what is needed and necessary to get a recreation designation for Lake Texoma. As you well know, it has been built for flood control and hydropower, but yet it is the third most visited lake built by the Corps of Engineers and has no recreation designation. What is necessary to get a recreation designation on Lake Texoma? It borders Texas and Oklahoma.

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General HILMES. Sir, the only thing I can say is that adding recreation as a project purpose was considered in previous studies and was not included in these recommendations, because it alone would not change the operation of the project——

Mr. WATKINS. Would you try to provide for the record, though, an answer for the question I asked and that is, what is necessary? You know and I know what the previous answers have been, but I would like to know what is necessary for us to be able to get a recreational designation for Lake Texoma. I will have some questions on that and the visitors center on the Oklahoma side that I will provide for you.

General HILMES. Sir, I will provide the information for the record.

[The information follows:]

DENISON DAM-LAKE TEXOMA, TEXAS AND OKLAHOMA

The addition of recreation as a project purpose would require Congressional authorization.

Mr. WATKINS. General, I have a number of questions and I want you to know I am being benevolent today because I have got 187 questions listed here and I am going to provide those and ask you and the staff to try to get the answers. I would ask them of you, but I don't want to put my committee chairman and my ranking member through all this questioning. But you have 187 questions and let me tell you both—you and General Hatch—I want to be cooperative and helpful, but I feel like that same commitment and cooperation is not coming from the Corps and the Assistant Secretary and I may be having to ask these 187 questions, plus a hundred more, in the near future if something positive doesn't happen. I don't understand—I can spend all these years on this subcommittee trying to keep money appropriated to you and the Chairman and the Ranking Member has been helpful yet I find things slide and we don't get any help.

I am getting a little complex personally and I would like to see a more positive attitude toward my area. I would like to have something more than just studies, because it is kind of hard for me to go back home and tell the people, well, we are studying it, we are studying it. I have a number of questions and I hope that—how long will it take me to get these questions answered, do you think?

General HILMES. Sir, we will move out on answering these questions and provide responses as soon as possible.

Mr. WATKINS. I would like to ask you to try and provide the answers back to the committee so I can have them with my staff to look over between now and the end of our hearings.

General HILMES. Yes, sir. We will provide responses to the questions.

Mr. WATKINS. We need the information before we have mark up. Mr. Chairman, to you and to Mr. Myers, I appreciate all your patience and your willingness to allow me to pursue these questions. I don't want to be a nuisance to the committee and I thank the staff for all their help and I will ask them for their continued

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support to help me move some things forward that are needed there for this low income area to ever be able to provide some kind of economic growth and development.

The President gets on the T.V. and says we have got the greatest economic growth going in the country and in my area we have got double digit unemployment, low per capita income of about $4500 in this particular area. Out migration during the last 50 years of about 50 percent of the people. How in the world can we provide some kind of economic stimulus when we turn to them and say we are not going to help you?

You are going to have to provide it upfront. We just don't fulfill the agreements that were made. I can see why some of my people or a few of them down there are picking up and bearing arms. I don't think we want some of those things to be happening because of the attitude it seems like this Government has taken. I would like to thank the Chairman and Mr. Myers for your time.

Mr. BEVILL. Thank you, Mr. Watkins.

You certainly play a very important role on this committee and we are very interested in these projects and, as you have pointed out, some of us have personally seen the Parker Lake project site and also the Sardis Road project area that the Congress directed to go ahead and build. I am glad to hear General, that you are moving on that.

We are very interested in the Parker Lake project. We would like to see some action on that. Mr. Watkins, we appreciate you being so considerate and kind to us not to ask those 187 questions.

Mr. WATKINS. I figured it might do me more harm than good if I went through all of them.

Mr. BEVILL. The hearings are scheduled to be over April the 16, but the answers to these questions need to be in the next week so they can be put into the record. The record is being typed right now as we go along as we proceed, as you know.

So if you have any problem with that please check with the staff if you need any further extension.

[The information follows:]

Questions Submitted by Congressman Watkins

CANADIAN RIVERS AND TRIBUTARIES, OKLAHOMA, TEXAS AND NEW MEXICO

Mr. WATKINS. What do you plan to accomplish with the $400,000 provided for Fiscal Year 1986 under General Investigations for the study of the Canadian River and Tributaries in Oklahoma, Texas and New Mexico?

General HILMES. Sir, funds provided in Fiscal Year 1986 will be used to continue feasibility phase studies, including the development of additional alternatives on the Deep Fork River.

Mr. WATKINS. You have requested $155,000 in General Investigations funding for Fiscal Year 1987 for this study. How do you plan to use these funds?

General HILMES. Sir, the requested funds will be used to complete the interim report on the Deep Fork River.

Mr. WATKINS. What is the status of the joint Corps-Soil Conservation Service Deep Fork study, which is a phase of the Canadian River study?

General HILMES. Sir, based on a Memorandum of Agreement that was finalized in March 1984, Soil Conservation Service and Corps personnel are jointly developing flood control alternatives to address water resource problems in the Deep Fork River Basin. A reconnaissance report was completed in November 1984 and feasibility studies are continuing. A plan of study for a demonstration reach for drainage located near Sparks, Oklahoma, has also been completed as a part of this interim,

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and is currently being evaluated. The alternative originally pursued as the most likely solution has proved to be infeasible. The locals recently suggested several new alternatives to consider. Funds provided in Fiscal Year 1985 were used to address additional concerns raised during the review of the interim report for the Palo Duro multiple-purpose project and, therefore, a minimal effort was directed to the Deep Fork interim. In Fiscal Year 1986, funds are being used to accomplish the first portion of the Deep Fork feasibility study.

Mr. WATKINS. When do you expect this study to be complete?

General HILMES. Sir, the Deep Fork study is scheduled to be completed in March 1987.

ARKANSAS RIVER AND TRIBUTARIES, SOUTH CENTRAL AND SOUTHEAST AREAS OF OKLAHOMA COMPREHENSIVE STUDY; RED RIVER BASIN, ARKANSAS, TEXAS, LOUISIANA AND OKLAHOMA COMPREHENSIVE STUDY

Mr. WATKINS. Assistant Secretary of the Army Robert Dawson testified last week that these two studies will be conducted at full Federal expense pursuant to language contained in House Report 98-755 accompanying P.L. 98-360, the Energy and Water Appropriations Act for Fiscal Year 1985. Is this your understanding?

General HILMES. Yes, sir, these two studies are being conducted at full Federal expense by the U.S. Corps of Engineers.

Mr. WATKINS. In Fiscal Year 1986, $450,000 was appropriated for the Arkansas River and Tributaries Comprehensive study and $350,000 was provided for the Red River Basin study. Please illustrate what was accomplished with these funds for both studies by providing a breakdown of major work elements accomplished in Fiscal Year 1986 and the funds expended on each.

General HILMES. Sir, the funds provided in Fiscal Year 1986 are being used to continue the feasibility phase on both studies. These investigations are focusing on determining the project sites with the greatest potential for multi-purpose development as well as assessing the feasibility of adding hydropower generating units at existing and authorized lakes. Specific items of work being pursued in Fiscal Year 1986 and the associated scheduled expenditures during the year for each include the following: $165,000 for the evaluation of water supply needs; $90,000 for the evaluation of navigation alternatives; $185,000 for consideration of flood control sites; $83,000 for hydropower studies; $77,000 for assessment of recreation potential at each of the sites; and $60,000 for fish and wildlife studies. The remaining $140,000 will be used for public involvement, plan formulation and study management. No major work elements for either study will be completed in Fiscal Year 1986.

Mr. WATKINS. According to my records, in Fiscal Year 1986 your capability was $700,000 for the Red River Basin study and $600,000 for the Arkansas River and Tributaries, South Central and Southeast Areas of Oklahoma study. However, because of cost sharing disputes, only $350,000 was appropriated for the Red River Basin study and $450,000 for the Arkansas River and Tributaries study. That left a shortfall of $350,000 on the Red River Basin study and $150,000 on the Arkansas River and Tributaries study, resulting in a $500,000 total shortfall for both studies. Please verify these figures.

General HILMES. Sir, the total Fiscal Year 1986 capability for these two studies was $1,300,000. The total Fiscal Year 1986 appropriation for these two studies was $800,000.

Mr. WATKINS. Did the lack of this $500,000 delay work on the two studies as originally scheduled? If so, how? If not, please explain why it did not.

General HILMES. Sir, the Fiscal Year 1986 budget request for the Red River Basin Comprehensive study and the Arkansas River and Tributaries, South Central and Southeast Areas of Oklahoma Comprehensive study was based on the assumption that an equal amount of non-Federal funding would be provided in Fiscal Year 1986 to continue the feasibility phase studies. Therefore, based on the actual amounts appropriated, the Red River Basin study was delayed six months and the South Central and Southeast Areas of Oklahoma Comprehensive study was delayed three months because of less than optimal funding.

Mr. WATKINS. If this $500,000 was added back into your appropriations for these two studies, would it put these projects back on your original schedule and help you to expedite completion on these studies?

General HILMES. Sir, subject to the usual qualifications, the addition of $350,000 to the Red River Basin Comprehensive study would advance completion from March 1989 to September 1988. The addition of $150,000 to the South Central and Southeast Areas of Oklahoma Comprehensive study, subject to the usual qualifications, would advance completion from December 1988 to September 1988.

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Mr. WATKINS. Are the funds requested in the Fiscal Year 1987 budget for these two studies equivalent to the Corps' capability for these two studies?

General HILMES. No sir, the requested funds are not equivalent to the Corps' capability for these two studies.

Mr. WATKINS. What is your capability for these two studies in Fiscal Year 1987?

General HILMES. Sir, subject to the usual qualifications, the Fiscal Year 1987 approved capabilities for the Arkansas River and Tributaries, South Central and Southeast Areas of Oklahoma Comprehensive study and the Red River Basin Comprehensive study are $750,000 and $1,150,000, respectively.

Mr. WATKINS. In Fiscal Year 1988?

General HILMES. Sir, based on the Fiscal Year 1987 budget request, the balance to complete after Fiscal Year 1987 for the South Central and Southeast Areas of Oklahoma Comprehensive study is $550,000 and for the Red River Basin Comprehensive study is $1,125,000. Capabilities for Fiscal Year 1988 have not been determined at this time.

CAPABILITY ON THE COMPREHENSIVE STUDIES

Mr. WATKINS. What is your capability to be able to complete these two studies by October 1988?

General HILMES. Sir, receipt of the Corps' approved capability for Fiscal Year 1987 for each study would allow for these two studies to be completed by October 1988.

Mr. WATKINS. What are the estimated completion dates of these two studies?

General HILMES. Sir, based on the Fiscal Year 1987 budget request, the South Central and Southeast Areas of Oklahoma Comprehensive study is scheduled to complete in December 1988 and the Red River Basin Comprehensive study will complete in March 1989.

Mr. WATKINS. How much could these completion dates be moved forward if additional funding were made available to fast-track them?

General HILMES. Sir, the Red River Basin and the South Central and Southeast Areas of Oklahoma Comprehensive studies have been scheduled as fast-track items since the initial study funds were received in Fiscal Year 1984. Delays have occurred from the original scheduled completion dates since full funding requirements were not provided in Fiscal Year 1986. Additional funds would permit advancement of the Red River Basin Comprehensive study by six months and the South Central and Southeast Areas of Oklahoma Comprehensive study by three months.

Mr. WATKINS. How much additional funding would be required for each study to allow you to be able to complete each of them by October 1988?

General HILMES. Sir, based on the receipt of the capability amount of $750,000 in Fiscal Year 1987 for the South Central and Southeast Areas of Oklahoma Comprehensive study the balance to complete is $400,000. Based on receipt of the capability amount of $1,150,000 in Fiscal Year 1987 for the Red River Basin Comprehensive study the balance to complete is $775,000. Receipt of these funds in Fiscal Year 1987 and 1988 would permit completion of these studies by the first of October 1988.

ARKANSAS RIVER AND TRIBUTARIES, SOUTH CENTRAL AND SOUTHEAST AREAS OF OKLAHOMA COMPREHENSIVE STUDY; RED RIVER BASIN, ARKANSAS, TEXAS, LOUISIANA AND OKLAHOMA COMPREHENSIVE STUDY

Mr. WATKINS. Please provide a list of all interim reports you will prepare as part of each of these two comprehensive studies and indicate anticipated completion dates of each.

General HILMES. Sir, we have scheduled only one interim feasibility report to be prepared as part of the two comprehensive studies. This interim is for the East Cache Creek study being pursued under the Red River Basin Comprehensive study. This interim is scheduled for completion in March 1988.

RED RIVER BASIN, OKLAHOMA, ARKANSAS, LOUISIANA AND TEXAS COMPREHENSIVE STUDY

Mr. WATKINS. Are any of the Fiscal Year 1986 funds that were provided for the Red River Basin study being used for the navigation portion of that study?

General HILMES. Yes, sir, approximately $25,000 is being used in Fiscal Year 1986 to continue studies for navigation from Shreveport, Louisiana, to Denison, Texas.

Mr. WATKINS. How much of your requested Fiscal Year 1987 funds are programmed for use on this navigation study?

General HILMES. Sir, an estimated $200,000 will be expended on the Red River Basin navigation studies in Fiscal Year 1987.

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Mr. WATKINS. When do you expect to begin and complete this navigation study?

General HILMES. Sir, the feasibility level study of navigation on the Red River began in April 1985 and is currently scheduled for completion in March 1989.

Mr. WATKINS. Please provide a schedule of milestones you anticipate leading to completion of the navigation portion of this study.

General HILMES. Sir, the information will be provided.

[The information follows:]

Milestone	Completion date
Alternative Alignments and Preliminary Costs	July 1986.
Complete Plan Formulation Data	June 1987.
Plan Selection and Optimization	March 1988.
Field Level Review and Draft Environmental Impact Statement	September 1988.
Completion of the Red River Basin Comprehensive Study and Issuance of the Division Engineer's Public Notice.	March 1989.

ARKANSAS RIVER AND TRIBUTARIES, SOUTH CENTRAL AND SOUTHEAST AREAS OF OKLAHOMA COMPREHENSIVE STUDY; RED RIVER BASIN, ARKANSAS, TEXAS, LOUISIANA AND OKLAHOMA COMPREHENSIVE STUDY

Mr. WATKINS. These two comprehensive studies are extremely important to me and my district. If there is any slippage in your work on these studies from the schedules indicated here, I would like it reported to me immediately. Will you agree to do that?

General HILMES. Yes, sir, the Tulsa District Engineer will inform you of any change in these schedules.

CENTRAL OKLAHOMA PROJECT

Mr. WATKINS. Your Fiscal Year 1986 appropriations included $90,000 for the Central Oklahoma project. How do you plan to utilize these funds?

General HILMES. Sir, the Fiscal Year 1986 funds are being used to resume the Central Oklahoma Project feasibility studies. Water supply needs for central Oklahoma are being updated and earlier studies are being reviewed as a basis to reformulate water conveyance alternatives in Fiscal Year 1987. The Central Oklahoma Project studies will be closely coordinated with the ongoing navigation and water conveyance alternatives under consideration in the Arkansas River and Tributaries, South Central and Southeast Areas of Oklahoma Comprehensive study.

Mr. WATKINS. You have budgeted $150,000 under General Investigations for this project in Fiscal Year 1987, an increase of $60,000 over current year funding. Why did you increase funding for this project so much when other projects are being zeroed out?

General HILMES. Sir, the level of funding for the Central Oklahoma Project has increased because the study was resumed in Fiscal Year 1986. Typically studies require greater levels of funding in their second year since study efforts increase. On the other hand, studies nearing completion usually require a lower level of funding and others may be suspended due to a lack of currently identified problems and needs. The Fiscal Year 1987 funds for the Central Oklahoma Project will be used to formulate and evaluate alternative water conveyance plans, and to initiate a series of workshops to obtain public input on these alternative plans.

CANADIAN RIVER AND TRIBUTARIES, OK, TX AND NM

Mr. WATKINS. Isn't the work on this project duplicative or at cross purposes with other studies, such as the Canadian River and Tributaries study?

General HILMES. No, sir, studies such as the Canadian River and Tributaries study are not considering water conveyance facilities as is being considered in the Central Oklahoma Project study. Other study authorities covering central and southeastern Oklahoma include the Canadian River and Tributaries, Oklahoma, Texas and New Mexico study; Arkansas River and Tributaries, South Central and Southeast areas of Oklahoma Comprehensive study; and the Red River Basin Arkansas, Texas, Louisiana and Oklahoma Comprehensive study. All of these studies are being closely coordinated to avoid duplication and to insure that the recommended solutions of each study are complimentary.

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CENTRAL OKLAHOMA PROJECT

Mr. WATKINS. Is the Central Oklahoma Project a single-purpose water supply project?

General HILMES. Sir, at this time, the study has not identified the purposes that are viable nor determined whether the water conveyance facilities would enhance and become a part of a comprehensive multiple-purpose plan of development for the area.

Mr. WATKINS. Is so, would there be any Federal interest in constructing the project?

General HILMES. Sir, if the results of studies show that only water conveyance is economically feasible, there would be no Federal interest in constructing the water conveyance feature of the Central Oklahoma Project study. At that time, studies would be concluded and results would be available to non-Federal interests for their implementation.

Mr. WATKINS. What is the status of this study?

General HILMES. Sir, Fiscal Year 1986 funds are being used to update water supply needs for central Oklahoma and to review previously prepared Central Oklahoma Project study reports and the reconnaissance report for the Red River Basin and the Arkansas River and Tributaries, South Central and Southeast Oklahoma Comprehensive studies as a basis for reformulating the water conveyance alternatives.

HUGO LAKE, OKLAHOMA, HYDROPOWER STUDY

Mr. WATKINS. I note that you have programmed $229,000 for the Hugo Lake hydropower study in Fiscal Year 1987, which is $129,000 over current year funding. What is your schedule for completion of this study?

General HILMES. Sir, the budget request of $229,000 will allow the study to be completed in September 1987.

Mr. WATKINS. Is this project being delayed because of our policies regarding non-Federal power development?

General HILMES. No, sir, however, if it is determined that non-Federal development is practical and a Federal Energy Regulatory Commission license is issued to construct hydropower generating facilities at this project, Federal studies would be suspended.

Mr. WATKINS. If so, why have you proposed an increase in funding?

General HILMES. Sir, our studies are not being impacted by the Federal Regulatory Commission licensing process at this time. Fiscal year 1986 funds are being used to complete hydropower plan formulation and system optimization studies and to initiate the Draft Feasibility Report. The increased funding level in Fiscal Year 1987 is required to complete the feasibility report as currently scheduled.

Mr. WATKINS. Will your Fiscal Year 1987 budget request provide enough funding to complete this study?

General HILMES. Yes, sir, the requested funds are adequate to complete the study.

Mr. WATKINS. When will you be able to start construction on Hugo Lake?

General HILMES. Sir, if the feasibility report recommends construction, the addition of hydropower facilities must be authorized by Congress and the District must then complete preconstruction planning. Assuming authorization of the project and optimum funding, the earliest construction date would probably be Fiscal Year 1991.

Mr. WATKINS. Will non-Federal cost sharing be required on the construction costs of this project?

General HILMES. Yes, sir, consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, the non-Federal sponsor would be required to pay 100 percent of the cost assigned to hydropower.

Mr. WATKINS. Is this project being constrained because non-Federal FERC studies are being done on it?

General HILMES. No, sir, the study is not being constrained by the non-Federal studies. The Corps studies are being conducted to formulate a plan which would develop the full hydropower potential of the project for National Economic Development.

LUKFATA LAKE, OKLAHOMA, HYDROPOWER STUDY

Mr. WATKINS. We provided $50,000 for the Lukfata Lake Hydropower Study in the current Fiscal Year. Since the Fish and Wildlife Service has said we cannot proceed

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with this study since Lukfata Lake serves as a critical habitat to the Leopard Darter, what are your plans for utilization of the Fiscal year 1986 funding?

General HILMES. Sir, funds provided in Fiscal Year 1986 will be used to initiate studies as to the extent of additional Leopard Darter habitat in the Little River system. These studies will form the basis for determining if a request for an exemption from the Endangered Species Act is warranted.

Mr. WATKINS. What is the status of your negotiations with the Fish and Wildlife Service on the Leopard Darter issue?

General HILMES. Sir, formal Section 7 consultations with the U.S. Fish and Wildlife Service started in April 1984, and on 11 March 1985, they issued their biological opinion, which states that construction and operation of the project would result in the adverse modification of the Leopard Darter's critical habitat, together with a Leopard Darter recovery plan. Coordination with the U.S. Fish and Wildlife Service will continue with the funds provided in Fiscal Year 1986.

Mr. WATKINS. You have requested no funding for this project for Fiscal Year 1987. Why?

General HILMES. Sir, pending resolution of the question as to whether an exemption from the Endangered Species Act should be requested in regard to the Leopard Darter, the need for funds in Fiscal Year 1987 could not be determined and therefore was not included in the budget request.

Mr. WATKINS. What level of funding would you require to continue your efforts on this project in Fiscal Year 1987 at your full capability level?

General HILMES. Sir, subject to the usual qualifications, the capability for this study in Fiscal Year 1987 is $55,000. These funds will be utilized to complete required studies for resolution of the endangered species problems.

MINGO CREEK, OKLAHOMA

Mr. WATKINS. What is the status of the Mingo Creek project?

General HILMES. Sir, as of 1 January 1986, the General Design Memorandum for Mingo Creek was approximately 20 percent complete and the Channel and Bridge relocation Feature Design Memorandum was approximately 10 percent complete. The General Design Memorandum and Feature Design Memorandum are scheduled to complete in May 1987.

Mr. WATKINS. What is your capability on this project in Fiscal Year 1987?

General HILMES. Sir, subject to the usual qualifications, the capability amount for the Mingo Creek, Oklahoma project is $423,000.

Mr. WATKINS. How much would that advance completion of the project?

General HILMES. Sir, the capability amount for Fiscal Year 1987 will not advance completion, as it is the same as the budget amount.

Mr. WATKINS. You have requested $423,000 for Mingo Creek Continuation of Planning and Engineering, a decrease of $477,000 from current year funding. Will the requested funding complete the Continuation of Planning and Engineering work on this project in Fiscal Year 1987?

General HILMES. Yes, sir, Continuation of Planning and Engineering activities will complete in Fiscal Year 1987 with the budgeted funds.

PARKER LAKE, OKLAHOMA

Mr. WATKINS. First, I would like to say that I am not at all satisfied with the conclusion of the Corps of Engineers that the Parker Lake project is a single-purpose project and that there is no Federal interest in the construction of it. It is not a single-purpose project, and there is Federal interest in its construction, as evidenced by virtue of its authorization in public law. This project is sorely needed in Oklahoma, and I will continue to push for its construction by the Federal government. Now; the letter Assistant Secretary Dawson sent me on December 13, 1985, regarding Parker Lake was accompanied by a letter to him from Mr. Randall Davis of the Office of Management and Budget dated December 12, 1985, also regarding Parker Lake. Mr. Davis stated in his letter, "However, because of the authorization of the Parker Lake project in the 1985 Supplemental Appropriations Bill (P.L. 99-88), we have no objection to the completion of ongoing planning and engineering by the Corps of Engineers, with the results turned over to local interests for their review and action." I believe Fiscal Year 1986 funds are being used for the referenced ongoing planning and engineering (specifically what the Corps of Engineers refers to as Advance Engineering and Design); is this true?

General HILMES. Sir, funds provided in Fiscal Year 1986 are being used for Continuation of Planning and Engineering activities on this project.

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Mr. WATKINS. Will all the originally planned Advance Engineering and Design activities for Parker Lake be completed with the $600,000 appropriated for Continuation of Planning and Engineering under general investigations for Fiscal Year 1986?

General HILMES. No sir, normal activities conducted under the Advance Engineering and Design classification include completion of the first set of plans and specifications required to initiate construction. The funds appropriated in Fiscal Year 1986 are not sufficient to proceed to this point.

Mr. WATKINS. If not, what Advance Engineering and Design items will remain to be completed?

General HILMES. Sir, the Continuation of Planning and Engineering effort in Fiscal Year 1986 is working toward completion of the General Design Memorandum, the real estate Design Memorandum for the damsite, and the access road and project building Design Memorandum. Remaining work items required to complete Advance Engineering and Design include the continuation of design on the embankment, outlet works and spillway Design Memorandum and plans and specifications, relocation Design Memorandums, survey contracts and archeological investigations, and the completion of the access road and project building plans and specifications.

Mr. WATKINS. What funding will be required to complete all originally planned Advance Engineering and Design items, as per the Office of Management and Budget letter?

General HILMES. Sir, the Southwestern Division has no approved capability on this project. However, should the local interests decide to proceed with the design of the project without major modifications, it is estimated they would expend about $950,000 to continue design in an orderly fashion and to complete the plans and specifications for the first construction contract.

Mr. WATKINS. What is the Corps' capability during Fiscal Year 1987 to complete these items?

General HILMES. Sir, no capability has been established for the project since the Administration has determined that this project is a single-purpose municipal and industrial water supply project, and as such, should be more properly constructed by local interests.

Mr. WATKINS. Given this information, why were no funds budgeted for Fiscal Year 1987 on this project?

General HILMES. Sir, no funds were budgeted for Fiscal Year 1987 since sufficient funds are available to achieve an orderly transition from the Corps effort to non-Federal assumption of project implementation.

Mr. WATKINS. I can only assume the Corps is complying with Office of Management and Budget direction to not have move forward funding for Parker Lake. But, am I to conclude that the Corps does not intend to comply with Office of Management and Budget direction to complete the Continuation of Planning and Engineering on Parker Lake?

General HILMES. Sir, sufficient Continuation of Planning and Engineering work should be completed with the funds received to date to permit the local sponsor to effectively use the information transferred to them for the final design of the major features of the project.

TUSKAHOMA LAKE, OKLAHOMA

Mr. WATKINS. Tuskahoma Lake on the Kiamichi River in Oklahoma is an authorized project for flood control, water supply, recreation and fish and wildlife conservation; correct?

General HILMES. Yes, sir, Tuskahoma Lake was authorized for those purposes in the Flood Control Act of 1962.

Mr. WATKINS. I also understand that the feasibility of adding hydropower is being investigated under the Red River Basin Comprehensive study. Is that correct?

General HILMES. Yes, sir, both conventional and pumped-back storage hydropower facilities are being investigated.

Mr. WATKINS. What is the status of the Red River Basin Comprehensive hydropower study?

General HILMES. Sir, studies for Tuskahoma Lake are progressing concurrently with studies of other potential sites and existing or authorized reservoir projects being considered for hydropower development. Studies are underway to establish pertinent hydrologic and hydraulic data and prepare designs and cost estimates for alternative plans.

Mr. WATKINS. When do you expect the portion of the hydropower study at Tuskahoma to be completed?

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General HILMES. Sir, the results of our studies on hydropower for the Tuskahoma Lake project site will be included in the feasibility report on the Red River Basin Comprehensive study which is scheduled for completion in March 1989.

Mr. WATKINS. If this study shows hydropower to be feasible, what process will the Corps use to request that it be added as an authorized purpose to the Tuskahoma Lake project?

General HILMES. Sir, it is anticipated the feasibility report on the Red River Basin Comprehensive study would provide the basis for authorization of hydropower by the Congress.

Mr. WATKINS. What time frame would be required for this purpose?

General HILMES. Sir, the report is scheduled for completion in March 1989. Assuming a favorable and expeditious review at all levels, it would probably take at least one year under traditional procedures, for the report to reach Congress for authorization.

Mr. WATKINS. What work could be started on the authorized Tuskahoma Lake project if funds were made available in Fiscal Year 1987?

General HILMES. Sir, with funds requested in Fiscal Year 1987 for the Red River Basin Comprehensive study, we would conduct informulation studies to consider the addition of hydropower to the authorized project.

Mr. WATKINS. What is the Corps' capability to accomplish this work in Fiscal Year 1987?

General HILMES. Sir, I have no current approved capability for the authorized Tuskahoma project because it is currently classified in the Deferred Category. However, subject to the usual qualifications, the capability of the Red River Basin Comprehensive study is $1,150,000 and these additional funds would allow acceleration of the Tuskahoma studies.

Mr. WATKINS. Would you please provide a fact sheet on the authorized Tuskahoma Lake summarizing the authorized project with comments as to how this site might best be re-evaluated with a view toward modifying the authorized project's purposes.

General HILMES. The information will be provided, sir.

[The information follows:]

February 22, 1986.

FACT SHEET

Subject: Tuskahoma Lake, Oklahoma.

Location: River Mile 118.5 of the Kiamichi River in Pushmataha County, Oklahoma.

Status: Authorized—(Deferred).

Authority: Authorized in the Flood Control Act of 1962, Senate Document 145, 87th Congress, 2nd Session, dated 23 October 1962. Detailed feasibility level studies of Tuskahoma Lake were made in the Hugo Lake Survey Report which was completed on 16 November 1961.

Purpose: Water supply, flood control, recreation, and fish and wildlife conservation.

Description of Project Features: The earthfill embankment would be constructed in two parts, separated by a narrow ridge. An uncontrolled, limited service spillway would be built in that ridge. The outlet works would consist of a 16-foot diameter gated conduit with intake structure. Low flow and water supply releases would be made through two 24-inch pipes. Total storage in the project would be 374,000 acre-feet, including 138,600 acre-feet of flood control storage, 231,000 acre-feet of conservation storage, and 4,400 acre-feet for sediment reserve. Total water supply yield for this project would be 200 mgd.

Relationship of Project to Other Projects in System: The project would operate in a system with Hugo and Sardis Lakes. Tuskahoma will provide flood control storage to help replace that which would be reallocated in Hugo Lake (ultimate development). It would also help provide flood control on the Kiamichi River above Hugo Lake. Tuskahoma Lake was planned as a source of water supply for central Oklahoma which would be needed about the year 2000.

Economic Data:

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	Senate Document No. 145	Last updated estimate	Current values	Current values
Price levels	1968	October 1981	October 1985	October 1985
Interest rate (percent)	2⅝	3¼	3¼	8⅜
First cost (thousands)	$15,400	$78,000	$89,000	$89,000
Annual cost	652	3,520	3,958	9,360
Annual benefit:				
Flood control recreation	176	1,028	1,109	1,032
General	82	164	164	133
Sport fishing and hunting	17	17	17	17
Fish and wildlife	137	149	149	149
Water supply	397	2,140	2,406	5,696
Area redevelopment	NA	130	147	393
Total	809	3,628	3,092	7,420
Benefit-to-cost ratio	1.2	1.03	1.01	0.79

Significant Project Impacts: The project will provide flood protection on the Kiamichi River above Hugo Lake. The project will provide 200 mgd of dependable water supply yield to meet future in-basin needs and for out-of-basin transfer to Central Oklahoma. Some recreation benefits would also be achieved through minimum recreation development of the project site.

Comments: This project would develop the maximum dependable yield for the basin at the damsite. Current and future water supply needs from the project should be re-evaluated. The potential for hydroelectric power generation using the conservation storage, until such time as water supply needs develop, should be considered. Tuskahoma Lake site is being analyzed for multipurpose development, including hydropower, as part of the Red River Basin Comprehensive Studies. In addition, a pumped storage hydropower opportunity in connection with Tuskahoma Lake is also being investigated. These studies are currently scheduled for completion in March 1989 as part of an overall plan for the Red River Basin in southeastern Oklahoma.

These are two approaches to accelerating planning for Tuskahoma Lake both of which would cost about $600,000. One—Studies leading to an interim Survey report, using the Red River Comprehensive General Investigations authority, could be initiated and completed within 24 to 30 months and is perhaps the most expeditious method available. Two—the other alternative would require reclassification of the authorized project from a deferred to an active status, funding in the Advance Engineering and Design Category and subsequent reformulation and optimization studies leading to preparation of a General Re-evaluation Report. This approach would require a somewhat longer period of time, perhaps as long as 48 months.

Although recreation and fish and wildlife are authorized project purposes, they may not be justified under today's federal criteria. As authorized, flood control benefits are about 22 percent of the total project benefits.

PINE CREEK LAKE, OKLAHOMA, HYDROPOWER STUDY

Mr. WATKINS. We provided $40,000 for the Pine Creek Lake Hydropower Study for the current Fiscal Year. How are you utilizing those funds?

General HILMES. Sir, the Fiscal Year 1986 funds are being used to identify a National Economic Development plan and to determine if the Federal Energy Regulatory Commission applicant is developing the optimum plan for adding hydropower facilities to the existing Pine Creek Lake project.

Mr. WATKINS. You have requested no additional funding for this project for Fiscal Year 1987; does that mean that this study will be completed in Fiscal Year 1986?

General HILMES. No, sir, it does not. Additional studies may be required in Fiscal Year 1987 depending on the Corps' determination as to whether the Federal Energy Regulatory Commission applicant is developing the optimum plan.

Mr. WATKINS. If not, what level of funding would you need to be able to continue your efforts on this study next year? What is your capability in Fiscal Year 1987 on the Pine Creek Lake Hydropower Study?

General HILMES. Sir, if the Federal Energy Regulatory Commission applicant is not developing the optimum plan, additional funds in Fiscal Year 1987 will be re-

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quired to complete the study. Subject to the usual qualifications, the capability for this study is $30,000.

DENISON DAM-LAKE TEXOMA, TEXAS AND OKLAHOMA (RESTUDY)

Mr. WATKINS. Is your restudy of the Denison Dam at Texoma Lake complete?

General HILMES. No, sir, the restudy is scheduled to complete in March 1987.

Mr. WATKINS. If so, what did it show?

General HILMES. Sir, the report recommendations for the restudy have not been determined at this time.

Mr. WATKINS. What is the status of this project?

General HILMES. Sir, a survey report was submitted to the Southwestern Division in March 1983 and returned to the District in August 1983. It had become apparent that due to significant interest in assuring that future water supply needs are not preempted by hydropower and other project purposes, major revisions in the report needed to be made. Studies that will provide the basis for those revisions are underway.

Mr. WATKINS. What would be necessary to add recreation as a project purpose to the Denison Dam project?

General HILMES. Sir, the addition of recreation as a project purpose would require additional Congressional authorization.

Mr. WATKINS. If recreation were added as a project purpose, would a reallocation of water storage to recreation have to be made?

General HILMES. No, sir, adding recreation as a project purpose alone would not necessitate change to the operation of the project. However, to stabilize the lake levels and raise the bottom of the conservation pool 20 feet or more as desired by some local interests, a reallocation of reservoir storage would be required. This pool raise could not be accomplished by just designating recreation as a project purpose. Furthermore, at least 50 percent of the cost of the storage reallocated to recreation would have to be borne by non-Federal interests.

Mr. WATKINS. If so, where would the allocation come from?

General HILMES. Sir, a reallocation of reservoir storage to recreation would come from hydropower storage.

Mr. WATKINS. If a reallocation is necessary, would local sponsors have to sign contracts to pay the costs of this storage?

General HILMES. Yes, sir, local sponsors would be required to pay at least 50 percent of the cost of the reallocated storage.

Mr. WATKINS. What is the estimated unit cost of this storage?

General HILMES. Sir, based on October 1984 price levels, the estimated unit cost for the storage is about $217 per acre-foot.

DENISON DAM-LAKE TEXOMA, TEXAS AND OKLAHOMA (COMMERCIAL ACTIVITIES)

Mr. WATKINS. What commercial activity review is currently underway, affecting Texoma Lake?

General HILMES. Sir a commercial activity cost comparison study is being performed at Lake Texoma. This study was announced to Congress on 11 September 1985 and is being performed under the guidelines established by OMB Circular A-76, Performance of Commercial Activities.

Mr. WATKINS. What activities are under review?

General HILMES. Sir, the study addresses maintenance of the project office complex, vehicles and equipment, 34 parks, the dam embankment, and the Cumberland Levees. The parks includes 875 camping and picnicking sites, 21 waterborne toilets, 88 vault toilets, 2 water treatment plants, and 247 electrical hookups. The dam embankment is 15,200 feet long and the two Cumberland Levees have a combined length of 11,000 feet. There are 60 miles of paved roads and 10.9 miles of unpaved roads at the project. Visitation to the project exceeded 8.7 million people in 1985.

Mr. WATKINS. What is the status of the review?

General HILMES. Sir, to date, we have completed a draft Performance Work Statement and the management study is in process. These documents were discussed during the first of two in-process reviews conducted 5 February 1986. The second in-process review is currently scheduled for June 1986 prior to submitting documents to the US Army Audit Agency for audit.

Mr. WATKINS. If the decision is reached that any or all of the activities under A-76 review should be contracted out, what major milestones should we expect and what time frame do you anticipate for each?

General HILMES. Sir, the first milestone is the initial decision, scheduled to be made on 21 December 1986. It is reached after the study is completed and an esti-

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mate is prepared of the cost of performing the work with Government forces. This estimate is compared to the contract price bid for performing the same work.

Mr. WATKINS. If these activities are contracted out, how many local jobs are anticipated to be lost?

General HILMES. Sir, the studies have not been completed to the point that a definite answer can be given. Thirty positions are being studied, but if the work is contracted, some of these positions will be saved to administer the contract and perform park rehabilitation.

DENISON DAM-LAKE TEXOMA, TEXAS AND OKLAHOMA (VISITOR CENTER)

Mr. WATKINS. With approximately 12 million people visiting Texoma Lake every year, there is a strong need for a visitor's center on the Oklahoma side of Texoma Lake. Do you have any plans at the present time for opening a visitor's center on the Oklahoma side of Texoma Lake?

General HILMES. Sir, there are currently no plans for the construction of a visitor center on the Oklahoma side of Lake Texoma to be operated by the Corps of Engineers. We are in the process of assisting the Marshall County, Oklahoma Chamber of Commerce by providing project brochures and interpretative static displays for use in their proposed lake visitor information center.

Mr. WATKINS. What would be necessary for such a visitor's center to be established?

General HILMES. Sir, Congressional authorization and subsequent appropriation of construction funds would be necessary for a visitor center to be established by the Corps of Engineers.

RED RIVER AND TRIBUTARIES ABOVE DENISON DAM, TEXAS, OKLAHOMA AND NEW MEXICO

Mr. WATKINS. Your Fiscal Year 1987 budget requested no funding under general investigations for the Red River and Tributaries Above Denison Dam study, which affects Texas, Oklahoma and New Mexico. Funding for the current year was requested and approved at a level of $210,000. Why do you propose to drop funding for this study in Fiscal Year 1987?

General HILMES. Sir, the funds requested for this study in Fiscal Year 1986 were to be used to continue the feasibility phase of the Rush Creek interim. However, since none of the multi-purpose lake alternatives investigated were found to be economically feasible, the Rush Creek interim was discontinued in September 1985. Subsequently, the funds appropriated in Fiscal Year 1986 were applied to savings and slippage. There are no currently known additional problems or needs in the Red River Basin Above Denison Dam study area, except for those on East Cache Creek which are being studied under the Red River Basin Comprehensive study authority.

Mr. WATKINS. Where are the projects located that this study encompasses?

General HILMES. Sir, no projects are being proposed for authorization as a result of this study.

Mr. WATKINS. What is the status of this study?

General HILMES. Sir, additional studies are not scheduled under this authority at the present time.

Mr. WATKINS. Are all the projects in this study complete?

General HILMES. Yes, sir, all studies of identified significant water resources problems needs and opportunities being conducted under this study authority have been completed.

Mr. WATKINS. If so, what were the recommendations of the study? If not, don't you think we should complete the study?

General HILMES. Sir, interim studies have been completed on the: Pease River, Texas, in 1980; North Fork of the Red River and Otter Creek, Oklahoma, in 1981; and Rush Creek, Oklahoma in 1985. The Pease River study was discontinued due to the lack of economic feasibility for a lake project. The North Fork and Otter Creek study resulted in changing the operation of Tom Steed Reservioir by limiting flood releases to channel capacity. The Rush Creek interim study was terminated because none of the lake alternatives were economically feasible. Other studies for local flood protection at Pauls Valley, Oklahoma, showed that a project would be economically feasible; however, city officials could not fulfill the requirements for local cooperation. Except for the East Cache Creek interim study, being conducted as a part of the Red River Basin Comprehensive study, there is no known need for other studies in the Red River Basin Above Denison Dam area at this time.

Mr. WATKINS. How much funding would you need in Fiscal Year 1987 to complete this study?

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General HILMES. Sir, no funds are needed for the study in Fiscal Year 1987, as there is no urgency for completing the study at this time.

ARCADIA LAKE, OKLAHOMA

Mr. WATKINS. You have requested $5.9 million for construction of Arcadia Lake in Fiscal Year 1987. What is your capability in Fiscal Year 1987 on this project?

General HILMES. Sir, subject to the usual qualifications, the capability for this project if $5,900,000.

Mr. WATKINS. If your capability is greater than indicated by your requested funding level, and a greater appropriation could be made, how much sooner could the project be completed?

General HILMES. Sir, we have no additional capability for this project in Fiscal Year 1987 and therefore cannot advance project completion.

COPAN LAKE, OKLAHOMA (RECREATION)

Mr. WATKINS. We appropriated $1.25 million for the current year for recreation facilities at Copan Lake. How are you utilizing these funds?

General HILMES. Sir, the funds appropriated in Fiscal Year 1986 will be used to construct a portion of the remaining recreation facilities proposed for this project. A contract for this work is scheduled to be awarded July 1986. Currently, a list of remaining recreation facilities proposed to be constructed at Copan Lake is being prepared for forwarding to higher authority for review and approval. Upon approval, the Fiscal Year 1986 funds will be allocated to initiate construction.

Mr. WATKINS. How much additonal funding would be required to allow you to complete the recreation facilities at Copan Lake as originally designed in Fiscal Year 1987?

General HILMES. Sir, the total estimated cost for constructing the remaining recreatoin facilities at Copan Lake is $3,000,000. The approved capability for this project in Fiscal Year 1987, subject to the usual qualifications, is $1,250,000.

EUFAULA LAKE, OKLAHOMA (BRIDGE REPLACEMENT)

Mr. WATKINS. What is the status of your work on replacement of the two bridges at Eufaula Lake?

General HILMES. Sir, the plans and specifications for the Piney Creek bridge replacement will be completed in February 1986 and a construction contract is scheduled to be awarded this Fiscal Year. A Design Memorandum has been initiated and the preparation of plans and specifications will begin in the third quarter of Fiscal Year 1986 for the Muddy Creek Bridge replacement.

Mr. WATKINS. You requested $800,000 for this project last year, but we appropriated only $500,000. How are you utilizing the $500,000 appropriated for Fiscal Year 1986?

General HILMES. Sir, the $500,000 appropriated for Fiscal Year 1986 are being used to prepare a Design Memorandum and to initiate and complete plans and specifications for Muddy Creek bridge.

Mr. WATKINS. Have you let a construction contract for the first bridge yet?

General HILMES. Sir, a construction contract for the Piney Creek bridge replacement has not been awarded.

Mr. WATKINS. If not, when will you do so? If so, when will the construction work on bridge #1 be completed?

General HILMES. Sir, a contract for the Piney Creek bridge replacement is scheduled for award in April 1986 with completion in April 1987.

Mr. WATKINS. What is the status of your work on bridge #2?

General HILMES. Sir, a Design Memorandum for the Muddy Creek bridge is scheduled to complete in June 1986 and plans and specifications are scheduled for completion in September 1986.

Mr. WATKINS. When do you expect to issue a construction contract?

General HILMES. Sir, a contract for replacement of the Muddy Creek bridge could be awarded in November 1986 and completed in March 1988, if sufficient funds were available.

Mr. WATKINS. What is the estimated completion date for bridge #2?

General HILMES. Sir, the Muddy Creek bridge replacement could be completed approximately 16 months after a construction contract is awarded.

Mr. WATKINS. Will any additional funds be required for completion of both bridges in Fiscal Year 1987?

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General HILMES. Sir, subject to the usual qualifications, an additional $390,000 could be used in Fiscal Year 1987 for this project. These additional funds will be required to award and complete the Muddy Creek bridge contract.

SARDIS LAKE, OKLAHOMA (ACCESS ROAD)

Mr. WATKINS. I have prepared a table which summarizes the funds that have been authorized and appropriated for the Sardis Lake Access Road from Daisy to Clayton, Oklahoma, over the past three years. I would like to ask that it be inserted into the record at this time.

SARDIS LAKE ACCESS ROAD

Fiscal year	Authorization	Appropriation
1984	0	0
1985	0	$5,000,000
1985 supplemental	$10,000,000	0
1986	0	$5,000,000
Total	$10,000,000	$10,000,000

Please verify these figures.

General HILMES. Sir, the figures are correct. However, the $5,000,000 appropriated in Fiscal Year 1985 was applied to savings and slippage because the road was not authorized until mid-August 1985.

Mr. WATKINS. How much of these funds have been spent, and on what?

General HILMES. Sir, about $20,000 has been expended as of 1 February 1986 for coordination activities with the State of Oklahoma concerning future operation and maintenance of the proposed Daisy Access Road and to initiate design.

Mr. WATKINS. I have been assured that all these funds have been obligated and will be used for the construction of Sardis Road. Is that your plan?

General HILMES. Sir, all of the funds appropriated for construction of the Daisy access road have not been obligated. Funds will be obligated as design proceeds and contracts are awarded.

Mr. WATKINS. What is the status of access road construction at Sardis Lake, including the total length from Daisy to Clayton?

General HILMES. Sir, the project will provide an all weather road between Sardis Lake and the Indian National Turnpike at Daisy, Oklahoma, approximately 20 miles to the west. The design of the road had been initiated and the first construction contract is scheduled for award in Fiscal Year 1986. In addition, a letter of assurance has been acquired from the Oklahoma Department of Transportation, tentatively agreeing to accept any additional rights-of-way acquired and to assume all responsibility for future maintenance, subject to approval by the State Highway Commission.

Mr. WATKINS. Have you started construction?

General HILMES. No, sir, construction of the road has not been initiated.

Mr. WATKINS. If not, when do you expect to let construction contracts?

General HILMES. Sir, construction of the Daisy Access Road is scheduled to be accomplished by award of more than one contract. The first contract will be for regrading and surfacing approximately 3 miles of an existing gravel surface road and is currently scheduled for award in June 1986. The remaining construction work, which includes grading, drainage and surfacing of 17 miles of road, is scheduled to be initiated with the award of a second construction contract in July 1987.

Mr. WATKINS. When do you expect the project to be completed?

General HILMES. Sir, assuming that only two contracts will be required to complete construction of Daisy Access Road, the initial construction contract would complete in June 1988 and the second construction contract would complete in September 1989.

Mr. WATKINS. If there are any delays or deviations in using these funds for other than Sardis Lake Road, I would like to be advised of that fact the very day such a request is made. Would you agree to do that?

General HILMES. Yes, sir, the District Engineer will inform you of any delays or deviations in using these funds for other than the Sardis Lake Access Road. It is noted that as of 1 March 1986, $215,000 will be withdrawn from funds allocated to the District in Fiscal Year 1986 for this work in accordance with Public Law 99-177,

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the Balanced Budget and Emergency Deficit Control Act of 1985 which is generally referred to as the Gramm-Rudman-Hollings Act.

Mr. WATKINS. How much money do you expect to obligate in Fiscal Years 1986 and 1987 on this project?

General HILMES. Sir, it is estimated that about $500,000 will be obligated in Fiscal Year 1986 and about $1,500,000 will be obligated in Fiscal Year 1987 to meet projected contractor earnings for construction of the Daisy Access Road during these two fiscal years.

Mr. WATKINS. How much additional funding would be required in Fiscal Year 1987 to complete the access road?

General HILMES. Sir, completion of the Daisy access road is scheduled for September 1989. Funds currently available in the District are sufficient for Fiscal Year 1987 scheduled expenditures.

SARDIS LAKE, OKLAHOMA (RECREATION)

Mr. WATKINS. I have prepared a table which summarizes the funds that have been appropriated for the Sardis Lake recreation facilities over the past three years. I would like to ask that it be inserted in the record at this time.

Sardis Lake recreation facilities

Fiscal year:	*Appropriation*
1984	$500,000
1985	750,000
1986	0
Total	1,250,000

Please verify these figures.

General HILMES. Sir, the figures are correct.

Mr. WATKINS. How much of these funds have been spent, and on what?

General HILMES. Sir, of the funds referenced, only the funds appropriated in Fiscal Year 1984 have been used for construction of recreation facilities at Sardis Lake. This contract was awarded in September 1984 and provided for the construction of a portion of the loop roads, picnic sites, camp sites, toilet facilities and group activity area facilities. This contract is complete except for final payment.

Mr. WATKINS. How much of these funds remain unspent?

General HILMES. Sir, the $750,000 provided in Fiscal Year 1985 for the construction of recreation facilities was applied to savings and slippage, pending development of a cost sharing agreement with local interests for construction and non-Federal operation and maintenance, consistent with projects for which recreation facilities are being constructed under provisions of the Federal Water Project Recreation Act of 1965, Public Law 89-72, as amended. Subsequent to applying these funds to savings and slippage, Public Law 99-88, which provides for construction of the remaining recreation facilities at Sardis Lake at full-Federal expense was enacted. Following approval by higher authority of the facilities proposes for construction, an allocation of $750,000, less a $32,000 reduction in compliance with the Gramm-Rudman-Hollings Act, is expected to be made to the District.

Mr. WATKINS. A letter I received from Colonial Franklin Tilton, District Engineer for the Tulsa District, dated February 12, 1986, indicated that all of the recreation facilities as originally planned for Sardis Lake have not been completed, and it said "a list of recreation facilities proposed for Sardis Lake has been forwarded to higher authority for review and approval. Upon approval, which is expected early this spring, and receipt of funds, we will proceed with the construction of these items plus various other recreation facilities with Construction General funds." Please provide a copy of the list described in Colonel Tilton's letter for the record.

General HILMES. Sir, the list will be provided.

[The information follows:]

SARDIS LAKE, OK, RECREATION FEATURES NONCOST SHARED FALL 1985 PRICES

Activity/facility	Approximate quantities	Total cost
I. Access and circulation:		
Roads	50 stations	129,980
Walks	50 SY	750

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SARDIS LAKE, OK, RECREATION FEATURES NONCOST SHARED FALL 1985 PRICES—Continued

Activity/facility	Approximate quantities	Total cost
II. Sanitation structures:		
Bathhouse	1 ea	77,000
Comfort station	1 ea	50,000
III. Utilities:		
Water supply system:		
Treatment plant	1 ea	90,000
Distribution	LS	56,000
Fountain and outlets	5 ea	1,450
Sewage and waste water disposal:		
Municipal system (gravity and force system)	LS	20,000
Oxidation lagoon	1 ea	40,000
Sanitary dump station electrical:		
Lighting	LS	52,000
Liftpumps	2 ea	28,000
Hookup	48	48,000
IV. Site preparation:		
Shrub planting	LS	1,000
Turf establishment	LS	2,000
V. Park furniture:		
Picnic tables	35	52,500
Grills and fireplaces	35	5,950
Trash receptacles	24	2,760
VI. Play facilities		0
VII. Signs: Instruction	30	6,000
Total		669,540
E&D and S&A		80,360
Grand total		750,000

SARDIS LAKE OKLAHOMA (RECREATION)

Mr. WATKINS. What is the status of its considerations?

General HILMES. Sir, approval of the list of proposed recreation facilities is pending in the Office, Chief of Engineers.

Mr. WATKINS. Also please indicate whether this list includes all those recreation facilities originally authorized for Sardis Lake.

General HILMES. Sir, the list includes only the recreation facilities proposed to be constructed at an estimated cost of $750,000, including Engineering and Design and Supervision and Administration. The total estimated cost of all the remaining recreation facilities as originally authorized for Sardis Lake is $2,700,000.

Mr. WATKINS. What is the status of installation of recreation facilities at Sardis Lake?

General HILMES. Sir, a contract to construct additional recreation facilities is currently scheduled for award in July 1986.

Mr. WATKINS. What improvements are planned, and when is work expected to begin and to be completed for each?

General HILMES. Sir, the proposed improvements provide for future development of the public use areas as shown in the Master Plan for this project. The first recreation contract should be awarded this summer with completion in December 1987. Facilities to be constructed with this contract include: access roads and walks; sanitation facilities; water supply, sewage and electrical systems; landscaping; and the installation of park furniture. Construction of remaining facilities is not scheduled pending appropriation of additional project funds.

Mr. WATKINS. If any of the following authorized recreation facilities is not included in current plans for installation at Sardis Lake, please indicate which is not and explain why for each: improved toilets, paved roads, drinking water in each of the recreation areas, group shelters in both Potatoe Hills Central and Sardis Cove, and sidewalks from the toilets to the parking areas.

General HILMES. Sir, current plans for construction of the remaining recreation facilities at Sardis Lake include each of the items described. However, the first con-

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struction contract to be awarded, assuming funds are made available, only provides for an improved toilet; sidewalks from the toilet to the parking area; paved roads and drinking water at Potatoe Hills Central area; as well as park furniture in the Sardis Cove area. Additional facilities such as group shelters in both Potatoe Hills Central and Sardis Cove will be constructed in subsequent contracts as additional funds become available.

Mr. WATKINS. How much money do you expect to obligate in Fiscal Years 1986 and 1987 on recreation facilities at Sardis Lake?

General HILMES. Sir, assuming approval of the facilities proposed for construction in the first contract, and allocation of the previously appropriated funds as expected, approximately $200,000 will be obligated in Fiscal Year 1986, approximately $500,000 in Fiscal Year 1987 with the remainder of the previously appropriated funds being used in Fiscal Year 1988.

Mr. WATKINS. How much additional funding will be required in Fiscal Year 1987 to complete the recreation facilities at Sardis Lake as currently planned?

General HILMES. Sir, subject to the usual qualifications, the capability for this project in Fiscal Year 1987 is $7,700,000 of which $2,700,000 would be used to complete the remaining recreation facilities.

Mr. WATKINS. As originally authorized?

General HILMES. Sir, the currently planned facilities are the same as those originally authorized.

SARDIS LAKE, OKLAHOMA (OPERATION AND MAINTENANCE)

Mr. WATKINS. The Sardis Lake project appears to be in disrepair, despite the fact that this activity has been consistently funded and we added $300,000 to the Corps budget for this activity last year. The new swimming beach is severely eroded; extensive brush exists in Potatoe Hills Central producing heavy tick populations; and there is considerable erosion on the dam embankment. I have prepared a table illustrating the amounts appropriated over the past three years for operations and maintenance at Sardis Lake. I would like to request that the table be made a part of the record at this time.

Sardis Lake O&M

Fiscal Year:	*Appropriation*
1984	$440,000
1985	534,000
1986	798,000
Total	$1,772,000

Please verify these figures.

General HILMES. Sir, the amounts listed in the table are correct.

Mr. WATKINS. Provide a comparison of the amounts appropriated for operations and maintenance at Sardis Lake over the past three years with the amounts actually spent, indicating what activities were accomplished with the expenditures each year.

General HILMES. Sir, the comparison will be provided.

[The information follows:]

Fiscal year	Funds appropriated	Funds spent
1984	$440,000	$378,000
1985	534,000	451,500
1986	798,000	[1] 608,000

[1] Estimated.

Note: These funds were used each year, to perform the necessary day-to-day operation and maintenance work as phases of project construction were completed by the Construction, General contractors.

Mr. WATKINS. We provided $798,000, an extra $300,000 above what you had requested in Fiscal Year 1986 for O&M at Sardis Lake. In a letter I received from Colonel Franklin Tilton of the Tulsa District, dated February 12, 1986, he indicated the Corps had identified a need for $608,000 worth of O&M requirements at Sardis Lake in Fiscal Year 1986. That indicates that a balance of $190,000 remains available for which you have not identified a need. Does that mean that all of the needed

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repairs, including those listed above, will be rectified through utilization of the $608,000 in Fiscal Year 1986.

General HILMES. Yes, sir, because this project is a new project and has not yet begun to show serious signs of wear, the $608,000 currently available for obligation should prove adequate for all operation and maintenance activities in Fiscal Year 1986.

Mr. WATKINS. If so, am I to understand that you have identified no O&M activities needed at Sardis Lake on which to expend the remaining $190,000?

General HILMES. Sir, at the present time, that is correct; however, should additional maintenance develop, a transfer of the necessary funds to accomplish the work will be requested.

Mr. WATKINS. If not, please explain what activities you intend to accomplish utilizing the remaining $190,000 in Fiscal Year 1986.

General HILMES. Sir, these funds are being utilized to accomplish operation and maintenance work at other Corps of Engineers projects within the Tulsa District, such as the road resurfacing at Hugo, Broken Bow and Pine Creek Lakes in Oklahoma.

MC CLELLAN-KERR ARKANSAS RIVER NAVIGATION SYSTEM, ARKANSAS AND OKLAHOMA (FT. SMITH AREA)

Mr. WATKINS. It has been reported that fees are being charged by the Corps for barges operating on the McClellan-Kerr Arkansas River Navigation System in the Ft. Smith area, and such fees are not charged elsewhere. Would you please confirm this or provide some insight into what could have led to my receiving such a report.

General HILMES. Sir, neither the Tulsa nor Little Rock District is authorized to charge fees for the operation of barges on the Navigation System. The Corps of Engineers charges a one-time processing fee of $100 for a permit for port facilities on navigable waters as required by Section 10 of the Rivers and Harbors Act of 1899. This requirement is Corps-wide and fees are prescribed in 33 CFR, Part 325.1(f). In addition, and in accordance with Corps-wide requirements, annual payments are collected for the lease of Government property to private individuals for waterway-connected use. Finally, fees are collected for overnight camping at the Corps operated recreation area adjacent to the Landside Entrance to Lock and Dam 13, which is in the Fort Smith, Arkansas, area.

INLAND WATERWAY FUEL TAX

Mr. WATKINS. Explain what fees system is in effect at this time for barges operating on the McClellan-Kerr Arkansas River Navigation System.

General HILMES. Sir, the Corps of Engineers does not charge any fees for operation of barges on the McClellan-Kerr Arkansas River Navigation System. The Senate Finance Committee, in its report on Senate Bill No. 1567, retained the Inland Waterway Fuel Tax timetable set in the Senate agreement with the Administration. This tax level is now 10 cents per gallon of fuel used for propulsion. The timetable calls for an increase of one cent per gallon per year beginning January 1, 1988 and reaching 10 cents additional per gallon on January 1, 1997. The maximum tax of 20 cents per gallon would remain in effect thereafter. The Inland Waterway Fuel Tax is applicable to most segments of the Inland Waterways of the United States.

STORAGE OF WATER FOR NAVIGTION PURPOSES

Mr. WATKINS. I understand that efforts are underway by the Southwestern Division to determine changes in Tulsa District storage projects which could benefit navigation on the lower McClellan-Kerr System. It this true?

General HILMES. Sir, studies are underway to evaluate alternative ways of managing the system of storage reservoirs in Oklahoma. All project purposes are being considered, including navigation.

Mr. WATKINS. If so, under what authority does the Corps of Engineers modify authorized flood control storage for navigation benefits?

General HILMES. Sir, the Corps of Engineers has no authority to modify authorized flood control storage and no changes in the allocation of storage are being considerd on the McClellan-Kerr Arkansas River Navigation System. Operational changes are made under the Corps of Engineers discretionary authority as long as there are no significant adverse impacts on the Congressionally authorized purposes.

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Mr. WATKINS. What are the anticipated negative effects on the Tulsa District projects?

General HILMES. Sir, any reduction in the rate at which water is released from flood control storage will result in a decrease in flood protection downstream. This reduction in release rate will also increase the length of time the lake is at a higher than normal level which will cause more damage in the reservoir area. However, the Tulsa District does not presently anticipate adoption of an operating plan that would cause any significant negative impact on the projects.

Mr. WATKINS. Will both the Oklahoma and Arkansas Congressional delegations be notified prior to implementation of any changes?

General HILMES. Sir, the delegations will be informed by the Tulsa District Engineer of any significant changes in the way the reservoir system is managed and the impacts of those changes.

EUFAULA LAKE, OKLAHOMA (OPERATION AND MAINTENANCE)

Mr. WATKINS. The appropriations we provided for operations and maintenance work at Eufaula Lake in Fiscal Year 1986 was $100,000 over the amount requested in the budget. It was my intent that these additional funds be used to improve the fisheries habitat and resources at the lake. Of the total $3,532,000 appropriated for Eufaula Lake for Fiscal Year 1986, how much was allocated to the Tulsa District?

General HILMES. Sir, to date, $3,159,000 has been allocated to this project. This, together with $5,000 unobligated carryover from Fiscal Year 1985, provides $3,164,000 for operation and maintenance of the project in the current fiscal year. In addition, Tulsa District is planning to award a contract for $500,000 to perform photogrammetric mapping of the entire lake area to eliminate the need for administering several small contracts. The additional $500,000 is expected to be made available for this work as needed.

Mr. WATKINS. How do you plan to spend the extra $100,000 we provided for this project?

General HILMES. Sir, the $100,000 will be used for topographic mapping.

Mr. WATKINS. Specifically where and what do you intend to accomplish to improve the fisheries habitat at Eufaula Lake?

General HILMES. Sir, at the present time, there are no plans for additional work to improve fisheries this fiscal year.

KEYSTONE LAKE, OKLAHOMA

Mr. WATKINS. What do you recommend doing about the reregulating dam problem at Keystone Lake?

General HILMES. Sir, after consideration of various alternatives, including the method used at Little Falls Dam on the Potomac River, the final recommendation was to remove the reregulation structure. Based on approval from higher authority to remove the structure, a set of plans and specifications was completed.

Mr. WATKINS. What would it cost to implement your recommendations?

General HILMES. Sir, a contract was awarded for $384,500 to remove the structure.

Mr. WATKINS. When do you expect to start carrying it out?

General HILMES. Sir, the removal contract was awarded in July 1985 and work started on 9 August 1985. The contractor is currently 80 percent complete with completion scheduled for May 1986.

WISTER LAKE, OKLAHOMA (MAJOR REHABILITATION)

Mr. WATKINS. What is the status of the Wister Lake Dam Safety study?

General HILMES. Sir, a Reconnaissance Report for the Major Rehabilitation of the Wister Lake project is being prepared by the Tulsa District and is approximately 90 percent complete.

Mr. WATKINS. When will this study be completed?

General HILMES. Sir, the Wister Lake Major Rehabilitation Program Reconnaissance Report is scheduled to be submitted to Southwestern Division in March 1986.

Mr. WATKINS. Who has the approval authority on the study's recommendations?

General HILMES. Sir, the authority to approve the Reconnaissance Report on the Major Rehabilitation at the Wister Lake project is in the Office of the Chief of Engineers.

Mr. WATKINS. When do you expect approval?

General HILMES. Sir, approval is expected in June 1986.

Mr. WATKINS. What remedial action do you recommed?

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General HILMES. Sir, the Reconnaissance Report is expected to recommend the construction of an energy dissipator type stilling basin downstream of the existing concrete overflow weir. Also, additional earthwork on the downstream side of the existing dam will be required as well as a slurry cutoff wall upstream at the dam.

Mr. WATKINS. What additional action is necessary before construction could start?

General HILMES. Sir, development and approval of the Feature Design Memorandum, Environmental Impact Statement and plans and specifications together with an appropriation of funds are required prior to initiation of construction.

Mr. WATKINS. What is the earliest date that construction could start?

General HILMES. Sir, construction could begin in Fiscal Year 1990.

Mr. WATKINS. Will rehabilitation require major earth work on the dam?

General HILMES. Yes, sir, additional fill will be required on the downstream side of the dam to provide a means to install downstream seepage control.

Mr. WATKINS. If major earth work on the dam is not planned, can the Corps of Engineers state in its professional engineering opinion that there are no reasonable probabilities of embankment failures during any flood event which could be anticipated at this project?

General HILMES. Sir, major earth work on the dam is planned; however, the proposed work does not addess the freeboard inadequacies based on current Corps of Engineers design criteria.

Mr. WATKINS. It is my understanding that the spillway has not been repaired since the last flood operation in 1984. Is this true?

General HILMES. Yes, sir, that is true.

Mr. WATKINS. If so, why?

General HILMES. Sir, studies have been conducted and there appears to be no unsafe conditions as a result of the 1984 flood. It was determined that major rehabilitation of the spillway would require removal of any interim spillway repairs, and that it would be more cost-efficient to delay these repairs until the major rehabilitation of the spillway is accomplished.

Mr. WATKINS. Do you anticiapte major spillway work as a part of the dam safety rehabilitation?

General HILMES. Yes, sir, a new stilling basin is planned as an addition to the spillway.

WISTER LAKE, OKLAHOMA (HYDROPOWER STUDIES)

Mr. WATKINS. As you know, Wister Lake is currently being studied for hydropower capabilities. Have potential construction cost savings been evaluated, assuming the power facilities could be constructed at the same time as the rehabilitation work?

General HILMES. Sir, under the Arkansas River and Tributaries, South Central and Southeast Areas of Okahoma Comprehensive study, the feasiblity of adding hydropower at Wister Lake is being evalutated. The evaluation will include an assessment of the cost of adding hydropower with and without the necessary major dam rehabilitation work.

Mr. WATKINS. If so, what are those cost sharings? If not, what are the reasons such cost sharing studies have not been done?

General HILMES. Sir, the cost savings, if any, associated with construction of hydropower facilities and the Major Rehabilitation work concurrently have not been determined at this time. The cost analysis will be done under the Arkansas River and Tributaries, South Central and Southeast Area of Oklahoma Comprehensive study.

WISTER LAKE, OKLAHOMA (NAVIGATION STUDIES)

Mr. WATKINS. Have additional storage studies for navigation improvements in the lower McClellan-Kerr system been conducted at Wister Lake?

General HILMES. No, sir; however, the Arkansas River Basin, Arkansas and Oklahoma study will be addressing the potential need for additional navigation storage in upstream reservoirs. Wister Lake is one of the reservoirs in which storage could be added if it is determined to be feasible. These studies will be closely coordinated with the Arkansas River and Tributaries, South Central and Southeast Areas of Oklahoma Comprehensive study and the results, where applicable, will be incorporated in the latter study's findings.

Mr. WATKINS. Do these studies deal with both high and low navigation flows?

General HILMES. Yes, sir, the potential need for additional navigation storage is being addressed in these studies.

Mr. WATKINS. When will the results of the studies be available?

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General HILMES. Sir, the Arkansas River and Tributaries South Central and Southeast Areas of Oklahoma Comprehensive study is currently scheduled for completion in December 1988 and the Arkansas River Basin, Arkansas and Oklahoma study is scheduled for completion in September 1989. Even though the schedules are different, through close coordination of the two studies, substantial information to make a determination of the feasibility of adding navigation storage in Wister Lake should be available to include in the report on the Arkansas River and Tributaries South Central and Southeast Areas of Oklahoma Comprehensive study.

WISTER LAKE, OKLAHOMA (WATER SUPPLY)

Mr. WATKINS. Water supply needs studies have been conducted in the past by the Corps of Engineers regarding Wister Lake and surrounding environs. None of these studies identified additional needs; however, I am aware that a recent request for substantial water supply storage was made by a major new industry and additional industrial activities indicate continued growth and demands in this area. Do current studies on the Poteau Basin include an analysis of the potential to raise the pool level to meet these demands and continue to provide adequate flood control?

General HILMES. Sir, a request is currently being processed for 10.34 million gallons per day of water supply from Wister Lake as a result of a major new industry in the Poteau River Basin. The existing Wister Lake project can probably supply this new demand without encroaching on the flood control storage or creating other adverse impacts; however, future water supply demands of significant magnitude could require modifications to the project to maintain adequate flood control storage and avoid adverse impacts. The potential need for additional water supply and resulting project modifications, if any, is being addressed under the Arkansas River and Tributaries, South Central and Southeast Areas of Oklahoma Comprehensive study.

Mr. WATKINS. If so, when will recommendations be available?

General HILMES. Sir, the study will be completed in December 1988.

WISTER LAKE, OKLAHOMA (SPILLWAY BRIDGE)

Mr. WATKINS. Construction of a bridge over the Wister Lake spillway has been proposed to prevent the flooding and periodic closure of the U.S. highway that runs across the dam and spillway. How much would it cost?

General HILMES. Sir, no detail design costs for the bridge has been prepared, however, it can be expected to cost more than $1.0 million.

Mr. WATKINS. How much would be saved, if the bridge work was done at the same time of the dam safety work?

General HILMES. Sir, no funds would be saved by concurrent construction of the bridge and the major rehabilitation work because the bridge is upstream of the anticipated work on the spillway.

Mr. WATKINS. Can this bridge be constructed by the Corps of Engineers as a part of the dam safety rehabilitation?

General HILMES. No, sir, the Major Rehabilitation program is limited to rehabilitation of major items that are intended to extend the useful life of a project or major feature. The bridge is considered an addition or betterment.

Mr. WATKINS. If not, what is required to do so?

General HILMES. Sir, specific Congressional authorization is required for construction of the bridge by the Corps of Engineers.

WISTER LAKE, OKLAHOMA (CORPS LEASING AND GRAZING POLICY)

Mr. WATKINS. I have continuing concerns about the agricultural leasing program at Wister Lake. Those concerns involve four issues: family priority leases; combining smaller leases into larger lease blocks; no announcements of minimum bids; and, arbitrary determinations that a lease is overgrazed. You conducted a meeting at the Wister project on October 30, 1985, to attempt to resolve some of these concerns, and provided me a progress report on December 2, 1985. Please provide for the record a report on how you are addressing these issues.

General HILMES. Sir, the information will be provided.

[The information follows:]

WISTER LAKE, OKLAHOMA

Family Priority Leases. Priority leases were granted to mitigate problems that arose from acquiring agricultural lands. It was the practice to offer priority leasing rights to owners and tenants along with their spouses when their property interests

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were acquired. There is no record that the rights were ever extended to others, such as children or grandchildren. The priority leasing program has been reviewed over past years by the Tulsa District. As a result of the review, it was concluded that the circumstances did not warrant a change in the priority leasing policy. That is to say, the policy resulted from the sensitivity which the Government felt towards former owners or tenants, who in many instances were giving up a traditional means of making a living. By affording these owners and tenants the right to continue to lease the property, they were able to pursue their normal means of livelihood. This privilege was never intended to be passed on as a right of survivorship, but only as a means of assisting those who were in possession at the time of acquisition. Accordingly, the policy is to continue to offer priority leases to only the owner and tenant. The enactment of the Land Acquisition Act of 1960, and more recently the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, provided provisions whereby former owners of property acquired by the Government receive financial relocation assistance. These Acts greatly diminished the need for priority leases. In the few instances where the relocation assistance legislation was not sufficient, some priority leases were granted; however, the policy that has been in effect for the past several years has been to shorten the terms of these leases. Today, the priority leases are granted only for a period of one year. This process has been generally accepted by owners whose property has been purchased.

Combining Smaller Leases Into Larger Lease Blocks. In recent years, leases at the Wister project have been consolidated into unit sizes that are not only more efficient and cost effective for the Government, but also allow a greater number of farmers and ranchers to bid on these tracts. Before the lease areas were consolidated, some of the tracts were without public access. Therefore, only the adjacent landowners could successfully bid on and lease the public land because they were the only people who had legal access. By consolidating the lease areas, public access to all areas has been provided thereby making more land area available for leasing. As a result of the October 30, 1985 meeting, it was agreed that only one area needed to be modified. This area has been revised in accordance with the recommendation presented at the meeting since public access is available. Subsequently, these areas have been leased.

No Announcement of Minimum Bids. The U.S. Army Corps of Engineers has followed a bidding process whereby the Government's contract estimate has remained confidential. This process encourages the dynamics of a free market and provides, through the means of competitive bids, a realistic test of the value of the property offered. Experience has shown that when Government estimates have been made known, bids tend to cluster around the estimates in a manner not truly reflective of the free market process. The present procedure apparently has worked well for all concerned.

Arbitrary Determination that A Lease is Overgrazed. Although areas have occasionally been withheld from inclusion in grazing invitations, a grazing lease has not been terminated at the Wister project since 1974. At a meeting at Wister, a recommendation was presented and it was resolved to establish a range management committee to review overgrazed areas. The committee is comprised of representatives from the community, the Corps of Engineers, the Oklahoma Department of Wildlife Conservation, and the Soil Conservation Service. On Friday, November 8, 1985, the committee reviewed their first parcel of land and this parcel of land was withheld from the current invitation for bids because of its poor condition. A report from the committee has been received. The consensus is that this parcel is in need of restoration prior to being returned to the leasing program. The Soil Conservation representative on this committee stated that the parcel is in such poor condition that it should not be returned to the grazing program for at least 10 years. It appears the views of the committee substantiate the original determination made by the Corps and it is planned to use the services of this committee in the future.

CORPS LEASING AND GRAZING POLICY

Mr. WATKINS. It is my understanding that you can and will enter into some long-term leases of Corps land to the private sector. Have you already begun any such long-term leases?

General HILMES. Sir, under current policy, the time frame for a lease may not exceed five years. Agricultural leases for five years are used throughout the Southwestern Division.

Mr. WATKINS. If so, are any of them in Oklahoma? If so, where?

General HILMES. Under Tulsa District's Model District Program, approval by higher authority to configure agricultural leases with a term of five years and a re-

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newal option for an additonal five years has been requested. The change, if adopted, will allow leasees to make long-range plans and is expected to encourage them to manage the lands more effectively. If the proposal is approved it will be applied where applicable throughout the Tulsa District. A list of current leases in the State of Oklahoma having a five-year term which are managed by the Corps of Engineers is being provided for the record.

[The information follows:]

Corps of Engineers long-term agricultural leases, State of Oklahoma

Project:	*Number of 5-yr leases*
Canton Lake	1
Chouteau lock and dam	2
Denison Dam—Lake Texoma	71
Eufaula Lake	19
Fort Gibson Lake	88
Fort Sill	1
Hulah Lake	3
Kaw Lake	7
Keystone Lake	35
Oologah Lake	10
McAlester	1
Robert S. Kerr lock and dam and reservoir	31
Sardis Lake	5
Tenkiller Ferry Lake	30
Webbers Falls locks and dams	22
Wister Lake	6
Total	332

SAND LAKE, OKLAHOMA

Mr. WATKINS. What is the status of the Sand Lake study?

General HILMES. Sir, the Sand Lake project was authorized by the 1962 Flood Control Act; however, no funds have been received to initiate Advance Engineering and Design studies. Sand Lake was placed in a deferred status in January 1984 due to a conflict with the Osage Indian Nation regarding subordination of mineral rights held by the Osage Nation. Resolution of the mineral rights issue is required prior to requesting that this project be reclassified to active status.

Mr. WATKINS. What actions have been made by the Corps to negotiate for the mineral rights that must be obtained prior to the construction of Sand Lake?

General HILMES. Sir, the Corps has taken no action to negotiate for mineral rights for Sand Lake because the project is in a deferred status; however, the Bartlesville City Manager, the Executive Director of the Bartlesville Area Chamber of Commerce, and the Chairman of the Chamber's Water Resource Committee met with the Osage Nation Council on December 19, 1984 to discuss the need for development of the Sand Lake project. During this meeting, the Osage Council indicated a willingness to support further study and development of Sand Lake at the authorized site and a desire to participate in that work; however, the Osage Council subsequently voted not to provide formal assurances of support for further study of Sand Lake. The Lake of the Osage Association, formed by local interests and the officials of the City of Bartlesville, is continuing to discuss the problems with the Osage Council in an attempt to resolve the conflict over the mineral rights.

Mr. WATKINS. What are your plans for future activity on this project?

General HILMES. Sir, preliminary studies indicate that the authorized Sand Lake project would provide needed flood control and water supply benefits in the Caney River Basin. However, we have no plans to initiate further study of this project without a formal assurance of support from the Osage Indian Nation. The Osage Nation has expressed opposition to the development of additional Corps of Engineers projects in Osage County, Oklahoma, in which Sand Lake would be located.

OZARK-JETA TAYLOR LOCK AND DAM, ARKANSAS; WEBBERS FALLS LOCK AND DAM, OKLAHOMA (TURBINE REPAIRS)

Mr. WATKINS. What is the status of the turbine repairs at Ozark-Jeta Taylor and Webbers Falls dams?

General HILMES. Sir, all turbine repairs at Ozark-Jeta Taylor Lock and Dam and Webbers Falls Lock and Dam have been completed.

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Mr. WATKINS. Are all five turbines at Ozark-Jeta back in service?

General HILMES. Sir, all five turbines at Ozark-Jeta Taylor Lock and Dam are back in service.

Mr. WATKINS. Are all repaired turbines at Webbers Falls in service?

General HILMES. Yes, sir, all turbines at Webbers Falls are in service.

Mr. WATKINS. Has there been any indication of failure or problems since the repairs were made?

General HILMES. No, sir, all known problems have been corrected. Since completion of the repairs, periodic inspections have been made to insure continued integrity of the units.

Mr. WATKINS. Why didn't the Corps seek litigation against the manufacturer of the faulty turbines?

General HILMES. Sir, damages could not be sought under the warrenty clause of the contract since it had expired before the failures occurred. A suit based on a latent design defect was considered; however, the manufacturer claimed the cause of the failures was beyond the state of the art of turbine design in the late 1960's. This position was supported by an independent consultant under contract to the Corps of Engineers.

Mr. WATKINS. Why were you installing them if they were beyond the state of the art?

General HILMES. Sir, at the time of design, no slant shaft turbine units of this magnitude had been installed. Smaller units of a similar design were being used satisfactorily and it was believed this design was necessary because of the way the turbine would function in these unique locations. No problems were anticipated due to an increase in size.

Mr. WATKINS. Are the slant shaft turbines at Webbers Falls similar to the turbines installed at the Harry S. Truman Dam project in Missouri?

General HILMES. Yes, sir, they are similar; however, the angle of slant at the Webbers Falls project is 12 degrees and at the Harry S. Truman project, the angle is 24 degrees. Also, there are speed increasers on the units at the Webbers Falls project but not at the Harry S. Truman project.

Mr. WATKINS. Based on our experience with this design at Ozark-Jeta Taylor and Webbers Falls dams, could the Corps have predicted similar problems occurring at the Harry S. Truman Dam?

General HILMES. Sir, at the time design of the units for the Harry S. Truman project was being accomplished, the problems at the Ozark-Jeta Taylor and Webbers Falls projects had not developed. The problems did not develop until about the time the units at the Harry S. Truman project were being installed.

BROKEN BOW LAKE, OKLAHOMA (GENERATOR REPAIR)

Mr. WATKINS. What is the status of the generator repairs at Broken Bow Lake?

General HILMES. Sir, both generators are fully operational and no new problems are being experienced at this time.

Mr. WATKINS. Has the Corps initiated litigation against the manufacturer on the faulty generators?

General HILMES. Sir, a suit was filed by the Government and subsequently the manufacturer filed a motion for dismissal. A conference was held in October 1985 and at this time the judge's decision on the motion for dismissal is pending.

FISH PRODUCTION IN CORPS LAKES

Mr. WATKINS. I understand that the Tulsa District has asked the U.S. Fish and Wildlife to prepare an assessment of the potential demand for water to support an increasing demand for catfish production. What were the results of that assessment?

General HILMES. Sir, a report on this subject was prepared by the National Fish Hatchery at Tishomingo, Oklahoma, in the summer of 1985 for the Tulsa District. The report projected water use for fish farming in Oklahoma to grow from 60,000 acre-feet of water use in 1985 to 810,000 acre-feet by the year 2035. It concluded that the development of private fish farms in Oklahoma had been gradual in the past, but with an increasing demand for fish as food, the growth in production will accelerate.

Mr. WATKINS. Is there a potential for net pen fish culture in Corps lakes in the Southwestern Division?

General HILMES. Yes, sir, the Arkansas Game and Fish Commission has a net pen facility in operation at Bull Shoals Lake in Arkansas. The Commission has a license from the Corps of Engineers and raises catfish and trout for reservoir stocking. The

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Commission has opened a second similar facility at Dardanelle Lock and Dam, Arkansas.

Mr. WATKINS. Is there a potential to generate a new source of Federal revenue from existing Corps of Engineers lakes by encouraging private enterprise to establish net pen fish productions for commercial use?

General HILMES. Sir, the potential for this private enterprise does exist; however, the Southwestern Division has not investigated the feasibility of commercial net pen fish production facilities.

Mr. WATKINS. I understand that the U.S. Fish and Wildlife Service has discussed with the Tulsa District the possibility for establishing a solar pond at the Tishomingo Fish Hatchery. What is the status of this activity?

General HILMES. Sir, the Tulsa District has had informal discussions with the U.S. Fish and Wildlife Service regarding technical aspects of solar ponds in thermal applications to stabilize ambient pond temperature. The Tulsa District has no authority to engage in any study of a solar pond at the Tishomingo National Fish Hatcherty.

Mr. WATKINS. Since the Southwestern Division is the designated center of expertise for solar thermal renewable energy in the Corps of Engineers, what activities are you pursuing in that regard?

General HILMES. Sir, there are no studies being conducted in Southwestern Division on solar thermal ponds at this time.

ARKANSAS RED RIVER BASIN CHLORIDE CONTROL, OKLAHOMA AND TEXAS (REMAINING RED)

Mr. WATKINS. The nation's water resources of the 94,000 square mile Red River Basin are polluted by sodium chloride to the point of severely limiting the use by a four-state area. This pollution is from two sources: man-made and natural. The Red River Chloride Control project is designed to control 65 percent of the natural chloride pollution from ten major source areas. Economic reanalysis studies completed in 1980 reaffirmed the technical engineering, environmental and economic feasibility of the project. The October 1985 first cost of the project is $185,415,000 with a benefit-to-cost ratio of 1.7 to 1.0. The authorizing legislation in 1966 and 1970 (P.L. 89-789 and P.L. 91-611) were based on the premise that the purpose of the project was to improve water quality and that water quality is a national objective and that the project should therefore be constructed at Federal expense. Cost sharing agreements were based on the concept that the clean-up of natural salt pollution would be a Federal responsibility, while the non-Federal responsibility would be pollution from man-made sources. Resolutions of local (non-Federal) assurances were developed based on this agreement, with assurances initially provided in 1964, additional resolutions provided in 1976, and new resolutions provided as recently as 1981. The states (non-Federal sponsors) have lived up to their agreements to bear the cost of eliminating the man-made sources of salt pollutions. Thus far, more than $25 million has been expended by the state of Texas alone in eliminating sources of such pollution in the Texas part of the basin. It is estimated that the state of Oklahoma is spending $5 million annually to control oilfield brine disposal in the Oklahoma part of the basin. In February 1982, the Assistant Secretary of the Army (Civil Works) notified the local sponsors that non-Federal financing of a major portion of the project cost would be required to proceed with construction of the remaining elements of the Red River Chloride Control project. Under what authority did the Assistant Secretary of the Army (Civil Works) require changes in the purpose and cost sharing agreements from those established by the authorizing legislation (P.L. 89-789 and P.L. 91-611)?

General HILMES. Sir, the authority is the responsibility vested in the Executive Branch by citizens of the Nation to effectively manage the Nation's resources during current times of extreme fiscal austerity. Those responsibilities include the advancement of initiatives to cause the construction of worthy projects such as the Red River Chloride Control Project. Our current initiative is to bring about, through a mutual Federal and non-Federal effort, a voluntary deviation from past legislation mandates and agreements culminated at a time when a $200 billion deficit was not envisioned. Pursuant to the Rivers and Harbors Appropriation Act of March 4, 1915, the Corps of Engineers can receive and expend cash contributions for authorized river and harbor improvement works.

The current estimated cost for the Arkansas-Red River Basin Chloride Control, Oklahoma, Texas and Kansas, Remaining Red project, which includes Area VI, Area VII, Crowell Brine Lake, Area IX, Area X and Areas XIII and XIV is $137,000,000 at October 1985 price levels, excluding an allowance for future inflation

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through the construction period. The remaining benefit-remaining cost ratio is currently 1.6 to 1.

Mr. WATKINS. Do the requirements for cost sharing on the natural pollution equate to a reneging of the Federal government on its responsibilities as agreed to as much as 20 years ago?

General HILMES. No, sir, proposed cost sharing initiatives currently underway during these difficult fiscal times of large Federal deficits is to find, through mutual agreement by Federal and non-Federal interests, methods to voluntarily deviate from past national water resources policies as a basis to permit timely project advancement.

Mr. WATKINS. How can you justify requiring up-front cost sharing by non-Federal sponsors although such requirements are in direct conflict with prior Federal/non-Federal agreements and congressional authorization to complete construction of this project?

General HILMES. Sir, the justification is based upon the need to identify new partnerships as a basis to advance worthy water resource projects. In the absence of such initiatives, Federal funds cannot be budgeted at this time to advance the project in accordance with past agreements.

Mr. WATKINS. Do you intend to continue to do so in the future?

General HILMES. Sir, future directions on this project will be determined through the evolution of policy by the Administration.

Mr. BEVILL. The Chair recognizes Mr. Myers.

Mr. MYERS. Thank you, Mr. Chairman. I have some questions I will put in the record.

[The information follows:]

Questions Submitted by Congressman Myers

FREEPORT HARBOR, TEXAS

Mr. MYERS. What is the condition of the jetty and entrance channel at Freeport Harbor?

General HILMES. Sir, the South Jetty continues to be maintained as necessary on an emergency basis. The North Jetty continues to deteriorate as maintenance is being deferred. The entrance channel is being maintained to project depth, 36 feet, by periodic dredging. The last dredging was performed in September 1985.

Mr. MYERS. Is the North Jetty any closer to failure than it was a year ago?

General HILMES. Yes, Sir. Only minimal maintenance is being performed on the North Jetty in anticipation of relcoating the jetty.

FOUNTAIN CREEK AT PUEBLO, COLORADO

Mr. MYERS. Is the Fountain Creek project ready for construction?

General HILMES. Sir, the project would be ready for initiation of construction approximately 6 months after receipt of construction funds. This time would be required to prepare plans and specifications for the first construction contract. The initiation of construction is also dependent upon project authorization and the signing of an acceptable Local Cooperation Agreement.

Mr. MYERS. What is your capability for 1987?

General HILMES. Sir, subject to the usual qualifications, our capability in fiscal year 1987 is $1,360,000 to initiate construction of the project.

Mr. BEVILL. We have a letter here from Congressman Charlie Wilson with some questions on a project you will need to answer and provide a response for the record. We would appreciate your working with Congressman Watkins in trying to get his projects worked out because I know they have some serious problems and whatever it takes to get them moving, we would like to do of course.

General HILMES. Sir, I will be happy to work with the Congressman.

Mr. BEVILL. All right. Thank you, Mr. Chairman.

[The information follows:]

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Questions Submitted by Congressman Wilson

WALLISVILLE LAKE, TEXAS

Question. General Hilmes, this Committee has approved the redesignated Wallisville project. Can you bring us up to date on its status?

Answer. Sir, final testimony was given in District Court on 26 November 1985. A decision on merits of having the injunction lifted has not been made. Construction cannot be resumed until the injunction is lifted.

Question. Tell us how you plan to implement construction should the environmental lawsuit be lifted?

Answer. Sir, it is our intention to finalize plans and specifications for the non-overflow dam in March 1986 so that construction can be initiated as soon as possible after the injunction is lifted and funds are made available.

Question. Should the injunction be lifted, what will be your construction capability?

Answer. Sir, subject to the usual qualifications, the current approved capability is $100,000 to continue engineering and design. The Corps of Engineers has not established a construction capability pending lifting of the injunction.

Question. How do you propose to secure the initial construction funds?

Answer. Sir, construction on this project would be resumed by award of a contract of about 30 months duration for the non-overflow dam, which has an estimated cost of $7.7 million, after appropriation of sufficient funds for the first year of the contract.

Mr. BEVILL. Thank you, General Hilmes, for your presentation.

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TUESDAY, FEBRUARY 25, 1986.

LOWER MISSISSIPPI VALLEY DIVISION AND MISSISSIPPI RIVER COMMISSION

WITNESSES

BRIGADIER GENERAL THOMAS SANDS, DIVISION ENGINEER AND PRESIDENT, MISSISSIPPI RIVER COMMISSION
FRED BAYLEY, III, CHIEF, ENGINEERING DIVISION
EUGENE NETTLES, CHIEF, PROGRAMS OFFICE
WILLIAM REEVES, PROGRAMS OFFICE
RODGER HARRIS, EXECUTIVE ASSISTANT
DEAN CALDWELL, ACTING CHIEF, PLANNING DIVISION

Mr. BEVILL. Good morning. The committee will come to order. You may proceed as you wish.

BRIGADIER GENERAL SANDS' ORAL STATEMENT

General SANDS. Thank you very much, Mr. Chairman, Mrs. Boggs, other members. It is certainly nice to be here again today, this time to present our fiscal year 1987 request for activities within the Lower Mississippi Valley Division and the Mississippi River and Tributaries project area.

With me today is Mr. Fred Bayley, our Chief Engineer; Eugene Nettles, on my right, Chief Programming Division; and Mr. William Reeves of our Programming staff.

Also in the audience, Mr. Rodger Harris, our Executive Assistant; and Mr. Dean Caldwell, our Acting Chief of Planning.

AREA OF RESPONSIBILITY

The Lower Mississippi Valley Division area has civil works responsibility for about 150,000 square miles in seven states generally bordering the Mississippi from St. Louis to the Gulf of Mexico. The Mississippi River and Tributaries project under the jurisdiction of the Mississippi River Commission is highlighted in yellow. Our major focus, of course, is to insure that drainage from the one-and-a-quarter million square mile basin of the Mississippi is carefully conveyed to the Gulf of Mexico.

COMPARISON BETWEEN FY 1986 AND FY 1987 PROGRAMS

This chart shows the comparison of our fiscal years 1986 and 1987 programs. Our 1987 program represents a decrease of approximately $57 million. I would like first to report on studies and projects funded under the General Appropriations.

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GENERAL INVESTIGATIONS

Our request under the General Investigations program is shown here. We will initiate and complete one new reconnaissance study and continue 14 feasibility studies. We will initiate one and continue two Continuation of Planning and Engineering studies.

LOUISIANA COASTAL HURRICANE PROTECTION

Within the Louisiana Coastal Area, study funds are requested to initiate and complete reconnaissance phase of a study of problems associated with hurricane-induced flooding in the unprotected areas along the coast.

CREVE COEUR CREEK

Creve Coeur Creek funds were added in Congress in fiscal year 1986 to initiate the reconnaissance phase of the study of flood and related land and water resources problems in this area, which is in North St. Louis County, Missouri. The reconnaissance phase of the study will be completed in March of 1987, funds requested for fiscal year 1987 are to continue the feasibility phase of the study.

FEASIBILITY STUDY COST SHARING IMPLEMENTED

The Lower Mississippi Valley Division has four feasibility phase studies on which 50/50 cost sharing by Federal and non-Federal interests is being implemented during fiscal year 1986. These studies are shown here. On each of these studies, local interests had entered into a contract with the Federal Government indicating their willingness to cost share the feasibility phase of the study. We have met with the local sponsors to discuss study schedules and terms of transferring funds, and in each case the local sponsors indicated funds will be made available.

CONTINUATION OF PLANNING AND ENGINEERING

Funds requested for fiscal year 1987 will allow us to initiate one Continuation of Planning and Engineering study based on completion of the feasibility report. This study is to address flooding problems in the Cape Giradeau-Jackson, Missouri area. We will continue planning and engineering studies for the Maline Creek watershed, and flooding problems in the Jackson, Mississippi area, the solution of which involves the Shoccoe dry dam on the Pearl River.

CONSTRUCTION, GENERAL

The program request under Construction, General Appropriations is shown here. Our fiscal year 1987 request is approximately $38 million less than the fiscal year 1986 program. This reduction reflects reduced requirements for the Red River Waterway project as work in Pools 1 and 2 are nearing completion. The fiscal year 1987 request provides funding for eight navigation and seven flood control projects.

NAVIGATION

The shallow draft and deep draft navigation system in the Lower Mississippi River Valley is the key to the vast network of inland waterways serving the heartland of the nation. Our request is con-

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sistent with our mission to improve and provide dependable year-round navigation for these channels.

LOCK AND DAM 26 REPLACEMENT

Funds requested for Lock and Dam 26 Replacement allow for continuation of construction of a replacement dam and lock two miles downstream from the existing structure. The replacement project is being constructed in stages. The first stage, which consisted of the construction of six and one-half gatebays of the dam, is complete, and flow was placed through the dam in February, 1985. The second stage, which consists of the construction of two one-half gatebays of the dam and the lock, was awarded in September, 1984. The lock contractor is making excellent progress.

LOCK AND DAM 26—SECOND LOCK

The fiscal year 1985 Supplemental Appropriation Act authorized a second lock at the Lock and Dam 26 Replacement. Design of the second lock is underway and is on schedule to interface with the next phase of construction on the replacement lock.

MISSISSIPPI RIVER—BATON ROUGE TO THE GULF

With fiscal year 1987 funds requested for the Mississippi River-Baton Rouge to the Gulf project, we will complete four foreshore dike contracts and three bank nourishment contracts. We also plan to initiate another foreshore dike contract and one bank nourishment contract. Unless continuing bank deterioration is arrested and confinement of flow enhanced, maintenance costs will escalate alarmingly. Currently we are only able to maintain the authorized depth of 40 feet about 70 percent of the time.

Our plan of improvement, which in addition to bank nourishment includes dike work and bulkhead rehabilitation, will increase this capability to about 90 percent of the time.

MISSISSIPPI RIVER SHIP CHANNEL

The Mississippi River Ship Channel project, providing for a 55-foot channel from the Gulf to Baton Rouge, Louisiana via Southwest Pass, was authorized and funded for construction in the fiscal year 1985 Supplemental Appropriation Act. Preconstruction planning and engineering is proceeding. Our New Orleans District is working with the local sponsor to develop a local cooperation agreement so construction can be initiated using fiscal year 1985 supplemental funds or other available funds. The local cooperation agreement being developed will cover the first phase of the project which is construction of a 50-foot channel from the Gulf to the mile 181, near Donaldsonville, Louisiana. This is half way between New Orleans and Baton Rouge. The first phase also includes training works and saltwater intrusion mitigation measures.

The initial construction contract scheduled for award in July, 1986, will be for dredging a 45-foot channel through Southwest Pass. Funds requested in fiscal year 1987 will be used to complete the dredging in Southwest Pass, thus providing 45-foot navigation to the Port of New Orleans.

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RED RIVER WATERWAY

On the Red River Waterway, the funds requested will allow continuation of our effort to have nine-foot navigation to Alexandria by 1987. With these funds and our carryover, we will continue construction in Pools 1 and 2 and our work on Lock and Dam 3.

FLOOD CONTROL

The Division's 1987 program continues to concentrate on hurricane protection along the Louisiana-Gulf Coast where three major hurricanes hit the coastal area during the past year.

While the first hurricane, Danny, was not intense, the second, Elena, and third Juan, were stronger, and more important, erratic and dilatory in making landfall. Waves generated by these storms battered the Louisiana Coast for several days, causing extremely high tides. It is difficult to relate the severity of these events to a design storm, but it is likely that the combined impact of the storms exceeded that which would be associated with the passage of a hurricane having an average annual return frequency of greater than 100 years.

It is estimated that approximately $325 million in damages occurred. The partially completed Federal hurricane protection projects and other related flood control measures prevented an estimated $890 million in damages. An additional $65 million could have been prevented if projects under construction or proposed were completed.

GRAND ISLE AND VICINITY

Last year I reported the Grand Isle and Vicinity hurricane protection project was nearing completion. Storms in the winter of 1984-85 and three hurricanes during 1985 caused severe damage to the project. Despite its damaged state from the earlier winter storms, the project prevented an estimated $14 million in structural damage during the battering from three hurricanes. The funds requested will be used to continue restoration of the project and to harden the project against further damage.

LAROSE TO GOLDEN MEADOW

The Larose to Golden Meadow hurricane protection project which is under construction was not sufficiently complete to fulfill its intended purpose during Juan. There were no failures in the partially completed levees, but tides surged through gaps and flanked around works in place. Had this project been completed, thousands of homes and many acres of agricultural land between Larose and Golden Meadow would have been protected. We estimate that $35 million in damages could have been prevented had these works been in place.

With funds requested in fiscal year 1987, we will complete construction of the Larose floodwall, and construction will continue on two levee contracts.

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NEW ORLEANS TO VENICE

The partially complete New Orleans to Venice hurricane protection project along both banks of the Mississippi River below New Orleans performed well during the storm, preventing damages of approximately $46 million. Funds requested in fiscal year 1987 will be used to continue work on one levee item in Reach C and will be used to complete construction on two levee items in Reach B–2 shown here.

LAKE PONTCHARTRAIN AND VICINITY

On the Lake Pontchartrain project, work is continuing on all portions of the project. Some protection is provided to all areas, and it is estimated that approximately $830 million in damages were prevented by the works in place. Essentially no damage occurred in the project area as the result of hurricane-driven tides.

OPERATIONS AND MAINTENANCE, GENERAL

Our Operations and Maintenance request for fiscal year 1987 is slightly less than what was programmed for fiscal year 1986. The program request provides sufficient funds for continuation of operations of our projects.

The Clarence Cannon Dam is shown here. The program requests under this appropriation will provide for operation and maintenance of activities at 31 navigation projects, such as the Leland-Bowman Lock, which was dedicated last year, 11 flood control projects and four multipurpose projects. In addition, we will continue our program for Inspection of Completed Works, General Regulatory programs and other activities.

MISSISSIPPI RIVER AND TRIBUTARIES PROJECT

Now, turning to the program under the Mississippi River and Tributaries account. The request for allocation of funds for the program is shown here.

GENERAL INVESTIGATIONS PROGRAM

Under the General Investigations categories, we have slightly in excess of $7 million. There are eight feasibility phase studies in the Survey portion of the program, four studies in Continuation of Planning and Engineering and two Advanced Engineering and Design projects.

CONSTRUCTION PROGRAM

The program request for the Construction category is approximately $193 million, as shown here. This is some $30 million less than the fiscal year 1986 program level. Most of this reduction is reflected in the reduced requirement for the Old River project which is in its last year of construction.

MISSISSIPPI RIVER LEVEES

Funds requested for the Mississippi River Levees project will permit us to continue our efforts to raise levees to grade and sec-

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tion, but not at the rate we would like. This is not a funding problem with the Federal program, but is based on the financial capability of local interests to provide the necessary rights-of-way.

On the main stem levee, a major bank and levee failure occurred in July of 1985, near Marrero, Louisiana. Fortunately, this failure occurred during low water. About 700 feet of reveted river bank and 200 feet of the levee failed. The New Orleans District responded quickly and in an innovative manner. Instead of the traditional levee setback normally accomplished, in this particular case, we filled in-place. Work was underway by the 30th of August and completed on the 11th of November with rising waters lapping at the toe of the levee.

CHANNEL IMPROVEMENT

Our Channel Improvement program, through the use of rock dikes and articulated concrete revetments, stabilizes the river in the desired alignment and is designed to protect the levees, improve the flood carrying capacity of the river during low flows and provide necessary navigation channel improvement. The funding level for our fiscal year 1987 request is sufficient to accomplish our planned program.

OLD RIVER

Construction of the Auxiliary Structure at Old River remains the number one civil works project of the Corps. With the funds requested in fiscal year 1987, work on the project will be completed. The final construction contract is scheduled for completion in the summer of 1986. During the fall of 1986, the Corps will revet the banks of the inflow channel, and the Auxiliary Structure will then be operational.

ATCHAFALAYA BASIN

With funds requested in fiscal year 1987 for the Atchafalaya Basin project, we will see a number of milestones accomplished. We will complete the floodwalls in the Morgan City area increasing substantially the flood protection in this area. We will also initiate work on the Wax Lake Outlet Control Structures, as well as numerous levee enlargement and sheet pile floodwall contracts. We are very pleased with the progress of work in this particular area.

ATCHAFALAYA BASIN FLOODWAY SYSTEM

Within the Atchafalaya Basin Floodway, the 1985 Supplemental Appropriations Act authorized a number of items for flood control and environmental purposes. At the present time, we are scheduled for acquisition of flood control flowage easements and funds requested in fiscal year 1987 will be used to prepare the real estate design memorandum.

EIGHT-MILE CREEK

The Eight-Mile Creek project was also authorized in the fiscal year 1985 Supplemental Appropriations Act and provides flood protection for urban areas in Paragould, Arkansas and for down-

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stream rural areas. The downstream rural portion of the project is unscheduled pending a re-evaluation of this segment. Funds in fiscal year 1987 will be used to continue General Design Memorandum studies.

WEST TENNESSEE TRIBUTARIES

The West Tennessee Tributaries project is located along the Obion and Forked Deer Rivers. The project had been in litigation from 1970 until the court lifted the injunction on 9 May 1985. In August, 1985, we started back to work, letting a contract for channel work on South Fork Forked Deer River. Funds requested for fiscal year 1987 will be used to complete this item, initiate the next item of channel work and relocate a pipeline.

TENSAS BASIN

In the Tensas Basin project, located in Southeastern Arkansas and Northeastern Louisiana, funds requested in fiscal year 1987 will be used to initiate and complete the last remaining scheduled items of recreation at Lake Chicot, complete the Tensas-Cocodrie pumping plant and diversion channel, and initiate a levee enlargement item in the Red River Backwater Areas. The Lake Chicot pumping plant became operational in April, 1985.

YAZOO BASIN

The Yazoo Basin is located in Northwestern Mississippi. Our fiscal year 1987 funding request is $24 million.

In the Upper Yazoo Projects area, we have completed 54 miles of channel work and have an additional 1.6 miles under contract which will be completed in fiscal year 1986. With funds requested in fiscal year 1987, we will initiate a contract for the next 9.2 miles of channel and levee work, initiate construction on East Hollie Lake drainage structure, and continue work on the Fort Pemberton control structure.

In the Main Stem unit, funds will be used to complete a major drainage structure and levee section at Bee Lake.

In the Big Sunflower unit we will continue one item of channel work and initiate another item in the Swan Lake area.

In the Tributaries unit, we will continue levee work on Pelucia Creek.

With funds provided in fiscal year 1986, we are continuing the Demonstration Erosion Control program, a joint effort between the Corps of Engineers and the Soil Conservation Service in six watersheds of the Yazoo Basin. We are very pleased with what is accomplished so far. This program is designed to control erosion in this area. It generally involves simple engineering activities. You see demonstrated here a small rock dike to prevent erosion and with vegetation this greatly adds significantly to the ability to control this particular process.

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MAINTENANCE

Within the maintenance area, the program request is approximately $104 million, as shown here. Our request includes funds for the initiation of operation of the Tensas-Cocodrie pumping plant.

This concludes my presentation. We will be happy to respond to any questions you might have.

[The statement of General Thomas A. Sands follows:]

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STATUS REPORT OF BRIGADIER GENERAL THOMAS A. SANDS,
DIVISION COMMANDER, LOWER MISSISSIPPI VALLEY DIVISION

OPENING REMARKS

MR. CHAIRMAN, OTHER DISTINGUISHED MEMBERS OF THE COMMITTEE, I AM BRIGADIER GENERAL THOMAS A. SANDS. I AM PLEASED TO CONTINUE MY APPEARANCE BEFORE THIS COMMITTEE. TODAY I WILL BE PRESENTING TO YOU THE FISCAL YEAR 1987 REQUEST FOR ACTIVITIES IN THE LOWER MISSISSIPPI VALLEY DIVISION AND THE MISSISSIPPI RIVER AND TRIBUTARIES PROJECT AREAS. MY CHIEF OF ENGINEERING, FRED BAYLEY; CHIEF OF PROGRAMMING, GENE NETTLES; AND ONE OF HIS ASSISTANTS, WILLIAM REEVES, ARE WITH ME AND WILL ASSIST IN PRESENTING TESTIMONY. I AM ALSO ACCOMPANIED BY RODGER HARRIS, MY EXECUTIVE ASSISTANT, AND DEAN CALDWELL, ACTING CHIEF OF PLANNING.

AREA OF RESPONSIBILITY

THE LOWER MISSISSIPPI VALLEY DIVISION HAS CIVIL WORKS RESPONSIBILITY IN A 150,000-SQUARE-MILE AREA IN SEVEN STATES BORDERING THE MISSISSIPPI RIVER GENERALLY FROM ST. LOUIS IN THE NORTH TO THE GULF OF MEXICO IN THE SOUTH. WE HAVE DISTRICT OFFICES LOCATED AT ST. LOUIS, MEMPHIS, VICKSBURG, AND NEW ORLEANS.

THE AREA UNDER JURISDICTION OF THE MISSISSIPPI RIVER COMMISSION IS THE ALLUVIAL VALLEY SHOWN IN YELLOW OF THE MISSISSIPPI RIVER FROM CAPE GIRARDEAU, MISSOURI, TO THE GULF OF MEXICO.

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THE FACT THAT RUNOFF FROM PRECIPITATION FALLING WITHIN THE VAST ONE-AND-A-QUARTER-MILLION-SQUARE MILE DRAINAGE BASIN OF THE MISSISSIPPI RIVER MUST BE SAFELY CONVEYED THROUGH THE LOWER MISSISSIPPI VALLEY DIVISION CONTRIBUTES SIGNIFICANTLY TO THE WATER RESOURCES PROBLEMS WE MUST ADDRESS.

SUMMARY OF PROGRAM

IT IS ANTICIPATED THAT LOCAL INTERESTS WILL EXPEND APPROXIMATELY $12.1 MILLION FOR LANDS, EASEMENT, RIGHTS-OF-WAY AND RELOCATIONS IN CARRYING OUT THEIR LOCAL COOPERATION REQUIREMENTS. THE TOTAL PROGRAM FUNDING IN FISCAL YEAR 1987 FOR THE CIVIL WORKS PROGRAM IN MY AREA OF RESPONSIBILITY IS $669.9 MILLION AND IS BASED ON APPROPRIATION OF $646 MILLION BY THE COMMITTEE, LOCAL CONTRIBUTION OF $9.8 MILLION IN CASH OR WORK-IN-KIND AND RECEIPT OF $2 MILLION FROM THE INLAND WATERWAY TRUST FUND.

COMPARISON BETWEEN FY 1986 AND FY 1987 PROGRAMS

THE LOWER MISSISSIPPI VALLEY DIVISION AND MISSISSIPPI RIVER COMMISSION CIVIL WORKS PROGRAMS RECEIVED ALLOCATIONS OF $703 MILLION IN FISCAL YEAR 1986. OUR REQUEST FOR FISCAL YEAR 1987 IS $646 MILLION. THIS IS PROGRAMMATIC DECREASE OF $57 MILLION.

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FLOOD CONTROL AND NAVIGATION REMAIN THE KEY WATER RESOURCES ISSUES, WITH WATER SUPPLY, WATER QUALITY, HYDROPOWER, AND PROTECTION OF COASTAL MARSHLAND RESOURCES ALSO HIGH ON THE AGENDA. OUR PROGRAM REQUEST FOR FISCAL YEAR 1987 REFLECTS THE CONCERNS AND NEEDS OF THE PEOPLE IN MY AREA OF RESPONSIBILITY.

LOWER MISSISSIPPI VALLEY DIVISION

I WOULD FIRST LIKE TO REPORT ON THE STUDIES AND PROJECTS FUNDED UNDER THE GENERAL APPROPRIATIONS. THIS IS THE PROGRAM THAT COMES UNDER MY JURISDICTION AS DIVISION COMMANDER.

GENERAL INVESTIGATIONS

OUR REQUEST UNDER THE GENERAL INVESTIGATIONS PROGRAM IS $8,004,000. THIS REQUEST INCLUDES $6,039,000 TO INITIATE AND COMPLETE ONE NEW RECONNAISSANCE STUDY AND CONTINUE 14 FEASIBILITY STUDIES; AND $1,965,000 TO INITIATE 1 AND CONTINUE 2 CONTINUATION OF PLANNING AND ENGINEERING STUDIES. SIX OF THE FEASIBILITY STUDIES WERE INITIATED PRIOR TO FY 1985 AND ARE NOT SUBJECT TO COST-SHARING. FOUR OF THE FEASIBILITY STUDIES ARE SUBJECT TO COST-SHARING UPON COMPLETION OF THE RECONNAISSANCE PHASE OF THE STUDY AND WE HAVE COST-SHARING AGREEMENTS ALREADY ON THE FOUR REMAINING FEASIBILITY STUDIES. COST-SHARING ON THESE STUDIES IS

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BEING IMPLEMENTED IN FISCAL YEAR 1986. FUNDS OBLIGATED AFTER 1 OCTOBER 1985 ON THE THREE CONTINUATION OF PLANNING AND ENGINEERING STUDIES ARE CONSIDERED POST AUTHORIZATION COSTS AND WILL BE SUBJECT TO COST-SHARING UNDER THE CONSTRUCTION COST-SHARING FORMULA.

LOUISIANA COASTAL - HURRICANE PROTECTION

LOCAL INTERESTS HAVE EXPRESSED A DESIRE FOR STUDY OF PROBLEMS OF HURRICANE-INDUCED FLOODING IN THE UNPROTECTED AREAS OF THE LOUISIANA COASTAL AREA. FUNDS REQUESTED ARE TO INITIATE AND COMPLETE THE RECONNAISSANCE PHASE OF THE STUDY.

CREVE COEUR CREEK

FUNDS WERE ADDED BY THE CONGRESS IN FISCAL YEAR 1986 TO INITIATE A RECONNAISSANCE PHASE STUDY OF THE FLOOD AND RELATED LAND AND WATER RESOURCES PROBLEMS IN THE CREVE COEUR CREEK WATERSHED WHICH IS LOCATED IN THE NORTH ST. LOUIS COUNTY MISSOURI. THE RECONNAISSANCE PHASE OF THE STUDY WILL BE COMPLETED IN MARCH 1987. FUNDS REQUESTED IN FISCAL YEAR 1987 ARE TO CONTINUE THE FEASIBILITY PHASE OF THE STUDY AND WILL REQUIRE 50-50 COST SHARING BY FEDERAL AND NON-FEDERAL INTERESTS.

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MERAMEC RIVER BASIN

IN RESPONSE TO CONGRESSIONAL DIRECTION THE SCOPE OF THE MERAMEC RIVER BASIN STUDY IS BEING EXPANDED FROM WATER SUPPLY ONLY TO INCLUDE FLOOD CONTROL DAMAGES, WATER QUALITY, IRRIGATION, RECREATION AND OTHER WATER RELATED PROBLEMS. THE RECONNAISSANCE PHASE OF THE STUDY IS SCHEDULED FOR COMPLETION IN SEPTEMBER 1987.

FEASIBILITY STUDY COST SHARING IMPLEMENTED

THE LOWER MISSISSIPPI VALLEY DIVISION HAS FOUR FEASIBILITY PHASE STUDIES ON WHICH 50-50 COST SHARING BY FEDERAL AND NON-FEDERAL INTERESTS IS BEING IMPLEMENTED DURING FISCAL YEAR 1986. THESE ARE: AMITE RIVER AND TRIBUTARIES; LOUISIANA COASTAL AREA-LAND LOSS AND MARSH CREATION; LOUISIANA COASTAL AREA-SHORELINE AND BARRIER ISLAND EROSION; AND LOUISIANA COASTAL AREA-WATER SUPPLY. ON EACH OF THESE STUDIES LOCAL INTERESTS HAD ENTERED INTO A CONTRACT WITH THE FEDERAL GOVERNMENT INDICATING THEIR WILLINGNESS TO COST-SHARE THE FEASIBILITY PHASE OF THE STUDY WHEN COST SHARING WAS IMPLEMENTED. LOCAL INTERESTS WERE NOTIFIED PRIOR TO 15 JANUARY 1986 THAT COST-SHARING WAS BEING IMPLEMENTED IN ACCORDANCE WITH THEIR CONTRACT. RESPONSES TO DATE HAVE GENERALLY BEEN POSITIVE. WE HAVE MET WITH THE LOCAL SPONSORS TO DISCUSS STUDY SCHEDULES AND TERMS FOR TRANSFERRING FUNDS. IN EACH CASE THE LOCAL SPONSOR HAS INDICATED FUNDS WILL BE MADE AVAILABLE.

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CONTINUATION OF PLANNING AND ENGINEERING

FUNDS REQUESTED IN FISCAL YEAR 1987 WILL ALLOW US TO INITIATE ONE CONTINUATION OF PLANNING AND ENGINEERING STUDY BASED ON COMPLETION OF THE FEASIBILITY REPORT. THIS STUDY IS TO ADDRESS LOCAL FLOOD PROTECTION AND RECREATION IN THE CAPE GIRADEAU-JACKSON MISSOURI AREA. WE WILL CONTINUE PLANNING AND ENGINEERING STUDIES FOR THE MALINE CREEK WATERSHED LOCATED IN THE ST. LOUIS MISSOURI METROPOLITAN AREA AND THE PEARL RIVER SHOCCOE DAM IN THE VICINITY OF JACKSON, MISSISSIPPI

CONSTRUCTION, GENERAL

THE PROGRAM REQUEST UNDER THE CONSTRUCTION, GENERAL APPROPRIATION IS APPROXIMATELY $196.3 MILLION, WHICH IS APPROXIMATELY $38 MILLION LESS THAT THE FY 1986 PROGRAM LEVEL. THIS REDUCTION REFLECTS THE REDUCED REQUIREMENTS FOR THE RED RIVER WATERWAY PROJECT AS WORK IN POOLS 1 & 2 NEAR COMPLETION AND PENDING A DECISION TO CONTINUE IN POOL 3 AND TO INITIATE CONSTRUCTION IN POOLS 4 & 5. THE FY 1987 REQUEST PROVIDES FUNDING FOR EIGHT NAVIGATION AND SEVEN FLOOD CONTROL PROJECTS.

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NAVIGATION

THE SHALLOW-DRAFT AND DEEP-DRAFT NAVIGATION SYSTEM IN THE LOWER MISSISSIPPI VALLEY IS THE KEY TO THE VAST NETWORK OF INLAND WATERWAYS SERVING THE HEARTLAND OF THE NATION. OUR REQUEST IS CONSISTENT WITH OUR MISSION TO IMPROVE AND PROVIDE DEPENDABLE YEAR ROUND NAVIGATION CHANNELS.

LOCK AND DAM 26 REPLACEMENT

FUNDS REQUESTED FOR LOCK AND DAM 26 REPLACEMENT ALLOW FOR CONTINUATION OF CONSTRUCTION OF A REPLACEMENT DAM AND A 1,200-FOOT BY 110-FOOT LOCK TWO MILES DOWNSTREAM FROM THE EXISTING STRUCTURE. THE REPLACEMENT PROJECT IS BEING CONSTRUCTED IN STAGES. THE FIRST STAGE, WHICH CONSISTED OF THE CONSTRUCTION OF SIX AND ONE-HALF GATEBAYS OF THE DAM, IS COMPLETE AND FLOW WAS PLACED THROUGH THE DAM IN FEBRUARY 1985. THE SECOND STAGE, WHICH CONSISTS OF THE CONSTRUCTION OF TWO ONE-HALF GATEBAYS OF THE DAM AND THE LOCK, WAS AWARDED IN SEPTEMBER 1984. THE LOCK CONTRACTOR IS MAKING EXCELLENT PROGRESS.

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LOCK AND DAM 26 (SECOND LOCK)

THE FISCAL YEAR 1985 SUPPLEMENTAL APPROPRIATION ACT AUTHORIZED A SECOND LOCK AT THE LOCK AND DAM 26 REPLACEMENT PROJECT. THIS ACT ALSO AUTHORIZED ENVIRONMENTAL MANAGEMENT ALONG THE UPPER MISSISSIPPI RIVER BASIN. DESIGN OF THE SECOND LOCK IS UNDERWAY AND IS ON SCHEDULE TO INTERFACE WITH THE NEXT PHASE OF CONSTRUCTION ON THE REPLACEMENT LOCK.

MISSISSIPPI RIVER, BATON ROUGE TO THE GULF

WITH FISCAL YEAR 1987 FUNDS REQUESTED FOR THE MISSISSIPPI RIVER-BATON ROUGE TO THE GULF PROJECT, WE WILL COMPLETE FOUR FORESHORE DIKE CONTRACTS AND THREE BANK NOURISHMENT CONTRACTS. WE ALSO PLAN TO INITIATE ANOTHER FORESHORE DIKE CONTRACT AND ONE BANK NOURISHMENT CONTRACT. UNLESS CONTINUING BANK DETERIORATION IS ARRESTED AND CONFINEMENT OF FLOW ENHANCED, MAINTENANCE COSTS WILL ESCALATE ALARMINGLY. ULTIMATELY, MAINTENANCE OF THE AUTHORIZED DEPTH WILL BECOME IMPRACTICABLE. CURRENTLY WE ARE ONLY ABLE TO MAINTAIN THE AUTHORIZED DEPTH OF 40 FEET ABOUT 70% OF THE TIME. THE WORK IDENTIFIED, WHICH IN ADDITION TO BANK NOURISHMENT INCLUDES DIKE WORK AND JETTY AND BULKHEAD REHABILITATION, WILL INCREASE THIS TO 90% OF THE TIME AND REDUCE DREDGING REQUIREMENTS. WE ESTIMATE THAT OVER THE 50-YEAR PROJECT LIFE, THIS WORK WILL RESULT IN AN AVERAGE ANNUAL SAVINGS OF

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$70 MILLION IN DREDGING COSTS WITH AN OVERALL B/C RATIO OF 14.3 TO 1 AT CURRENT INTEREST RATES. LOSS OF AUTHORIZED DEPTH, WHICH WILL INEVITABLY OCCUR WITHOUT THE NEW WORK, WOULD SERIOUSLY DISRUPT THE NATION'S COMMERCE SINCE NEW ORLEANS AND BATON ROUGE ARE OUR FIRST AND FIFTH PORTS.

MISSISSIPPI RIVER SHIP CHANNEL

THE MISSISSIPPI RIVER SHIP CHANNEL PROJECT PROVIDING FOR A 55-FOOT CHANNEL FROM THE GULF TO BATON ROUGE, LOUISIANA VIA SOUTHWEST PASS WAS AUTHORIZED AND FUNDED FOR CONSTRUCTION IN THE FISCAL YEAR 1985 SUPPLEMENTAL APPROPRIATION ACT. PRECONSTRUCTION PLANNING AND ENGINEERING IS PROCEEDING. WE ARE NEGOTIATING WITH THE LOCAL SPONSOR TO DEVELOP AND EXECUTE A BINDING LOCAL COOPERATION AGREEMENT SO CONSTRUCTION CAN BE INITIATED USING FISCAL YEAR 1985 SUPPLEMENTAL OR OTHER AVAILABLE FUNDS. THE LOCAL COOPERATION AGREEMENT BEING DEVELOPED WILL COVER THE FIRST PHASE OF THE PROJECT WHICH IS CONSTRUCTION OF A 50-FOOT CHANNEL FROM THE GULF TO THE MILE 181, NEAR DONALDSONVILLE, LOUISIANA. THE FIRST PHASE ALSO INCLUDES TRAINING WORKS AND SALTWATER INTRUSION MITIGATION MEASURES.

THE INITIAL CONSTRUCTION CONTRACT SCHEDULED FOR AWARD IN JULY 1986 WILL BE FOR DREDGING A 45-FOOT CHANNEL THROUGH SOUTHWEST PASS AND THIS WORK WILL BE ACCOMPLISHED WITH FISCAL YEAR 1985

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SUPPLEMENTAL FUNDS. FUNDS REQUESTED IN FISCAL YEAR 1987 WILL BE USED TO COMPLETE THE DREDGING IN SOUTHWEST PASS, THUS PROVIDING 45-FOOT NAVIGATION TO THE PORT OF NEW ORLEANS. INITIATION OF THIS WORK, OF COURSE, IS SUBJECT TO EXECUTING A BINDING LOCAL COOPERATION AGREEMENT.

RED RIVER WATERWAY

ON THE RED RIVER WATERWAY, FUNDS REQUESTED FOR FISCAL YEAR 1987 WILL ALLOW CONTINUATION OF OUR EFFORT TO HAVE 9-FOOT NAVIGATION TO ALEXANDRIA, LOUISIANA BY 1987. THESE FUNDS TOGETHER WITH OUR FISCAL YEAR 1986 CARRYOVER WILL BE ADEQUATE TO CONTINUE CONSTRUCTION IN POOLS 1 AND 2 AND OUR WORK ON LOCK AND DAM 3. COMPLETION OF LOCKS AND DAMS 3, 4, AND 5 IS INDEFINITE PENDING A DECISION TO CONTINUE CONSTRUCTION IN POOL 3 AND INITIATE CONSTRUCTION IN POOLS 4 AND 5.

FLOOD CONTROL

FLOOD CONTROL IS OF MAJOR IMPORTANCE AND IS OF PRIMARY CONCERN TO THE PEOPLE LIVING IN THE LOWER MISSISSIPPI VALLEY. WITH COMPLETION OF THE CLARENCE CANNON DAM PROJECT IN FY 1985, PRIMARY EMPHASIS IN THE DIVISION'S FY 1987 PROGRAM CONTINUES TO CONCENTRATE ON HURRICANE PROTECTION ALONG THE LOUISIANA GULF COAST, WHERE THREE MAJOR HURRICANES LASHED THE COASTAL AREA DURING THE PAST YEAR.

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WHILE THE FIRST HURRICANE, DANNY, WAS NOT INTENSE, THE SECOND, ELENA, AND THIRD, JUAN, WERE STRONGER, AND MORE IMPORTANTLY, ERRATIC AND DILATORY IN MAKING LANDFALL. WAVES GENERATED BY THESE STORMS BATTERED THE LOUISIANA COAST FOR SEVERAL DAYS CAUSING EXTREMELY HIGH TIDES. IT IS DIFFICULT TO RELATE THE SEVERITY OF THESE EVENTS TO A DESIGN STORM, BUT IT IS LIKELY THAT THE COMBINED IMPACT OF THE STORMS EXCEEDED THAT WHICH WOULD BE ASSOCIATED WITH THE PASSAGE OF A HURRICANE HAVING AN AVERAGE RETURN INTERVAL GREATER THAN 100 YEARS.

IT IS ESTIMATED THAT APPROXIMATELY $325 MILLION IN DAMAGES OCCURRED. THE PARTIALLY COMPLETED FEDERAL HURRICANE PROTECTION PROJECTS AND OTHER RELATED FLOOD CONTROL WORKS PREVENTED AN ESTIMATED $890 MILLION IN DAMAGES. AN ADDITIONAL $65 MILLION COULD HAVE BEEN PREVENTED IF PROJECTS UNDER CONSTRUCTION OR PROPOSED WERE COMPLETED.

GRAND ISLE AND VICINITY

LAST YEAR I REPORTED THE GRAND ISLE AND VICINITY HURRICANE PROTECTION PROJECT WAS NEARING COMPLETION. THE ONLY REMAINING WORK CONSISTED OF VEGETATION WORK, WHICH WAS SEASONAL IN NATURE, AND CONSTRUCTION OF BOARDWALKS OVER THE DUNES. STORMS IN THE WINTER OF 1984-85 AND THREE HURRICANES DURING 1985 CAUSED SEVERE DAMAGE TO THE PROJECT PRIOR TO COMPLETION. DESPITE ITS DAMAGED STATE FROM THE EARLIER WINTER STORMS, THE PROJECT PREVENTED AN ESTIMATED $14 MILLION IN STRUCTURAL DAMAGE DURING THE BATTERING

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FROM THREE HURRICANES. THE FUNDS REQUESTED IN FISCAL YEAR 1987 WILL BE USED TO CONTINUE RESTORATION OF THE PROJECT AND TO HARDEN THE PROJECT AGAINST FURTHER DAMAGE.

LAROSE TO GOLDEN MEADOW

THE LAROSE TO GOLDEN MEADOW HURRICANE PROTECTION PROJECT WHICH IS UNDER CONSTRUCTION WAS NOT SUFFICIENTLY COMPLETE TO FULFIL ITS INTENDED PURPOSE DURING HURRICANE JUAN. THERE WERE NO FAILURES IN THE PARTIALLY COMPLETED LEVEES BUT TIDES SURGED THROUGH GAPS AND FLANKED AROUND WORKS IN PLACE. HAD THIS PROJECT BEEN COMPLETED THOUSANDS OF HOMES AND MANY ACRES OF AGRICULTURAL LAND BETWEEN LAROSE AND GOLDEN MEADOW WOULD HAVE BEEN PROTECTED. WE ESTIMATE THAT $35 MILLION IN DAMAGES COULD HAVE BEEN PREVENTED HAD THE PROTECTION WORKS BEEN IN PLACE.

WITH FUNDS REQUESTED IN FISCAL YEAR 1987 WE WILL COMPLETE CONSTRUCTION OF THE LAROSE FLOODWALL AND CONSTRUCTION WILL CONTINUE ON TWO LEVEE CONTRACTS.

NEW ORLEANS TO VENICE

THE PARTIALLY COMPLETE NEW ORLEANS TO VENICE HURRICANE PROTECTION PROJECT ALONG BOTH BANKS OF THE MISSISSIPPI RIVER BELOW NEW ORLEANS PERFORMED WELL DURING THIS PAST BUSY HURRICANE SEASON PREVENTING DAMAGES OF APPROXIMATELY $46 MILLION.

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FUNDS REQUESTED IN FISCAL YEAR 1987 WILL BE USED TO COMPLETE CONSTRUCTION OF TWO LEVEE ITEMS IN REACH B-2 AND TO CONTINUE WORK ON ONE LEVEE ITEM IN REACH C. WORK ON THE EAST BANK BARRIER LEVEE MENTIONED IN OUR TESTIMONY LAST YEAR WILL BE PLACED UNDER CONSTRUCTION NEXT YEAR SUBJECT TO AVAILABILITY OF FUNDS.

LAKE PONTCHARTRAIN AND VICINITY

ON THE LAKE PONTCHARTRAIN HURRICANE PROTECTION PROJECT, WORK IS CONTINUING ON ALL PORTIONS OF THE PROJECT. SOME PROTECTION IS PROVIDED TO ALL AREAS AND IT IS ESTIMATED THAT APPROXIMATELY $830 MILLION IN DAMAGES WERE PREVENTED BY THE WORKS IN PLACE DURING THIS PAST HURRICANE SEASON. ESSENTIALLY NO DAMAGE OCCURRED IN THE PROJECT AREA AS THE RESULT OF HURRICANE-DRIVEN TIDES.

WORK IS PROGRESSING WELL TOWARD CONSTRUCTION OF THE HIGH LEVEL PLAN IN ALL AREAS OF THE PROJECT EXCEPT THE NEW ORLEANS WEST UNIT WHERE CONSTRUCTION HAS NOT YET BEEN INITIATED. HOWEVER, INTERIM PROTECTION IS PROVIDED IN A LARGE PORTION OF THIS UNIT AS THE RESULT OF CONSTRUCTION PREVIOUS TO AUTHORIZATION OF THE CURRENT PROJECT.

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OPERATIONS AND MAINTENANCE, GENERAL PROGRAM

OUR OPERATION AND MAINTENANCE REQUEST FOR FY 1987 IS APPROXIMATELY $143.7 MILLION WHICH IS ONLY $1.3 MILLION LESS THAN WHAT WAS PROGRAMMED FOR FY 1986. THE PROGRAM REQUEST BASICALLY PROVIDES SUFFICIENT FUNDS FOR THE CONTINUED OPERATION AND MAINTENANCE OF OUR PROJECTS. THE PROGRAM REQUEST UNDER THIS APPROPRIATION WILL PROVIDE FOR OPERATION AND MAINTENANCE ACTIVITIES AT 31 NAVIGATION PROJECTS ONE OF WHICH IS IN A CARETAKER STATUS; 11 FLOOD CONTROL PROJECTS; AND 4 MULTIPURPOSE PROJECTS INCLUDING POWER. IN ADDITION, WE WILL CONTINUE OUR PROGRAMS FOR INSPECTION OF COMPLETED WORKS, GENERAL REGULATORY FUNCTIONS, REMOVAL OF AQUATIC GROWTH, AND PROJECT CONDITION SURVEYS.

MISSISSIPPI RIVER COMMISSION

TURNING NOW TO THE PROGRAM UNDER THE MISSISSIPPI RIVER AND TRIBUTARIES ACCOUNT. THIS WORK COMES UNDER MY JURISDICTION AS PRESIDENT, MISSISSIPPI RIVER COMMISSION. THE REQUEST FOR ALLOCATION OF FUNDS TO THIS PROGRAM IS $298 MILLION. I MIGHT POINT OUT HERE THAT THE BUDGET DOCUMENTS BEFORE YOU ARE BASED ON COST SHARING CONSISTENT WITH COST-SHARING AND FINANCING CONCEPTS AGREED TO BY THE ADMINISTRATION AND THE SENATE MAJORITY

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LEADERSHIP IN ANTICIPATION OF ENACTMENT OF LEGISLATION TO SUPPORT THIS CONCEPT. IT IS THE POSITION OF THE ADMINISTRATION THAT COST-SHARING PRINCIPLES MUST BE THE SAME FOR ALL PROJECTS. COST SHARING IS APPLICABLE TO NEW STARTS AND UNSTARTED SEPARABLE ELEMENTS.

GENERAL INVESTIGATIONS PROGRAM

OUR REQUEST UNDER THE GENERAL INVESTIGATIONS CATEGORY IS $7,062,000. THIS REQUEST INCLUDES $3,314,000 ON 8 FEASIBILITY PHASE STUDIES IN THE SURVEY PORTION OF THE PROGRAM; $2,158,000 ON 4 STUDIES IN THE CONTINUATION OF PLANNING AND ENGINEERING PORTION OF THE PROGRAM; AND $1,590,000 ON 2 ADVANCED ENGINEERING AND DESIGN PROJECTS. THREE OF THE FEASIBILITY STUDIES, EASTERN ARKANSAS REGION, REELFOOT LAKE AND TIPTONVILLE ARE SUBJECT TO COST SHARING. FUNDS OBLIGATED AFTER 1 OCTOBER 1985 ON THE FOUR CONTINUATION OF PLANNING AND ENGINEERING AND ALL COSTS OF THE TWO ADVANCED ENGINEERING AND DESIGN PROJECTS WILL BE SUBJECT TO COST-SHARING UNDER THE CONSTRUCTION COST-SHARING FORMULA.

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CONSTRUCTION PROGRAM

THE PROGRAM REQUEST UNDER THE CONSTRUCTION CATEGORY IS APPROXIMATELY $193 MILLION WHICH IS $30.6 MILLION LESS THAN THE FY 1986 PROGRAM LEVEL. MOST OF THIS REDUCTION IS REFLECTED IN THE REDUCED REQUIREMENT FOR THE OLD RIVER PROJECT WHICH IS IN ITS LAST YEAR OF CONSTRUCTION.

MISSISSIPPI RIVER LEVEES

FUNDS REQUESTED FOR THE MISSISSIPPI RIVER LEVEES PROJECT WILL PERMIT US TO CONTINUE OUR EFFORTS TO RAISE THE LEVEES TO GRADE AND SECTION, BUT NOT AT THE RATE WE WOULD LIKE. THIS IS NOT A FUNDING PROBLEM WITH THE FEDERAL PROGRAM, BUT IS BASED ON THE FINANCIAL CAPABILITY OF LOCAL INTERESTS TO PROVIDE RIGHTS-OF-WAY. AT THE END OF FY 1986 THERE STILL WILL REMAIN JUST OVER 400 MILES OF LEVEES WHICH ARE BELOW GRADE OR SECTION AND 7 MILES OF NEW LEVEE WHICH NEED TO BE CONSTRUCTED.

ON THE MAIN STEM LEVEE, A MAJOR BANK AND LEVEE FAILURE OCCURRED ON 30 JULY 1985 ALONG THE RIGHT DESCENDING BANK, NEAR MARRERO, LOUISIANA. THIS IS IN METROPOLITAN NEW ORLEANS. FORTUNATELY, THE FAILURE OCCURRED DURING LOW WATER. ABOUT

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700 FEET OF REVETED RIVERBANK AND 200 FEET OF LEVEE FAILED TOWARD THE RIVER. THE NEW ORLEANS DISTRICT RESPONDED QUICKLY. THEY HAD THE REHABILITATION WORK UNDERWAY BY 30 AUGUST AND COMPLETED WORK ON 11 NOVEMBER WITH RISING WATERS LAPPING AT THE TOE OF THE LEVEE.

CHANNEL IMPROVEMENT

OUR CHANNEL IMPROVEMENT PROGRAM THROUGH THE USE OF ROCK DIKES AND ARTICULATED CONCRETE REVETMENTS STABILIZES THE RIVER IN THE DESIRED ALIGNMENT AND ARE DESIGNED TO PROTECT THE LEVEES, IMPROVE THE FLOOD CARRYING CAPACITY OF THE RIVER DURING LOW FLOWS AND TO IMPROVE NAVIGATION. THE FUNDING LEVEL IN OUR FY 1987 REQUEST IS ADEQUATE TO DO THIS IN THAT WE ARE ABLE TO ACCOMPLISH WORK AT MOST LOCATIONS BEFORE THEY BECOME CRITICAL.

OLD RIVER

CONSTRUCTION OF THE AUXILIARY STRUCTURE AT OLD RIVER REMAINS THE NUMBER ONE PROJECT IN THE CORPS CIVIL WORKS PROGRAM. WITH THE FUNDS REQUESTED IN FY 1987, WORK ON THE PROJECT WILL BE COMPLETED. THE FINAL CONSTRUCTION CONTRACT IS SCHEDULED FOR COMPLETION IN THE SUMMER OF 1986. DURING THE FALL OF 1986 THE CORPS WILL REVET THE BANKS OF THE INFLOW CHANNEL, AND THE AUXILIARY STRUCTURE WILL THEN BE OPERATIONAL.

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JUST UP RIVER OF THE OLD RIVER PROJECT, A PARTNERSHIP BETWEEN THE CITY OF VIDALIA, LOUISIANA, AND CATALYST OLD RIVER HYDROELECTRIC HAS BEEN GRANTED A LICENSE BY THE FEDERAL ENERGY REGULATORY COMMISSION TO CONSTRUCT AND OPERATE A HYDROELECTRIC POWER PLANT. CONSTRUCTION BEGAN IN DECEMBER 1985 AND IS SCHEDULED FOR COMPLETION IN APRIL 1989.

ATCHAFALAYA BASIN

WITH FUNDS REQUESTED IN FY 1987 FOR THE ATCHAFALAYA BASIN PROJECT, WE WILL SEE A NUMBER OF MILESTONES ACCOMPLISHED. WE WILL COMPLETE THE FLOODWALLS IN THE MORGAN CITY AREA INCREASING SUBSTANTIALLY THE FLOOD PROTECTION IN THIS AREA. WE WILL ALSO INITIATE WORK ON THE WAX LAKE OUTLET CONTROL STRUCTURE AS WELL AS NUMEROUS LEVEE ENLARGEMENT AND SHEET PILE FLOODWALL CONTRACTS. I AM VERY HAPPY WITH THE PROGRESS BEING MADE.

ATCHAFALAYA BASIN FLOODWAY SYSTEM

FOR THE ATCHAFALAYA BASIN FLOODWAY SYSTEM PROJECT, THE FY 1985 SUPPLEMENTAL APPROPRIATIONS ACT AUTHORIZED ACQUISITION OF FLOOD CONTROL FLOWAGE EASEMENTS ON 59,000 ACRES, ENVIRONMENTAL EASEMENTS ON 367,000 ACRES, PUBLIC ACCESS TO 50,000 ACRES,

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RECREATION FACILITIES, AND MANAGEMENT UNITS. AT THE PRESENT TIME, WE HAVE SCHEDULED ACQUISITION OF THE FLOOD CONTROL FLOWAGE EASEMENT AND DEVELOPMENTAL RIGHTS FOR ACCOMPLISHMENT, AND FUNDS REQUESTED FOR FY 1987 WILL BE USED TO PREPARE A REAL ESTATE DESIGN MEMORANDUM.

ST. FRANCIS BASIN

IN THE ST. FRANCIS BASIN LOCATED IN SOUTHEASTERN MISSOURI AND NORTHEASTERN ARKANSAS, FUNDS REQUESTED IN FY 1987 WILL CONTINUE CHANNEL AND BRIDGE RELOCATION WORK ON THE PROJECT. WORK WILL ALSO BE PERFORMED ON BELLE FOUNTAIN DITCH, BLACKFISH BAYOU, UPPER BUFFALO CREEK, HONEY CYPRESS CREEK, CASTOR RIVER AND IN THE OAK DONNICK FLOODWAY. CONSTRUCTION OF THIS PROJECT IS PROGRESSING AT A VERY GOOD PACE.

EIGHT-MILE CREEK

EIGHT-MILE CREEK PROJECT WAS AUTHORIZED IN THE FY 1985 SUPPLEMENTAL APPROPRIATIONS ACT AND PROVIDES FLOOD PROTECTION FOR URBAN AREAS IN PARAGOULD, ARKANSAS AND FOR DOWNSTREAM RURAL AREAS. THIS PROJECT IS PRESENTED UNDER THE COST-SHARING CONCEPTS AGREED TO BETWEEN THE ADMINISTRATION AND THE SENATE MAJORITY LEADERSHIP. THE DOWNSTREAM RURAL PORTION OF THE PROJECT IS UNSCHEDULED PENDING A REEVALUATION OF THIS SEGMENT. FUNDS REQUESTED IN FY 1987 WILL BE USED TO CONTINUE GENERAL DESIGN MEMORANDUM STUDIES.

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WEST TENNESSEE TRIBUTARIES

THE WEST TENNESSEE TRIBUTARIES PROJECT IS LOCATED ALONG THE OBION AND FORKED DEER RIVERS. THE PROJECT HAD BEEN IN LITIGATION FROM 1970 UNTIL THE COURT LIFTED THE INJUNCTION ON 9 MAY 1985. IN AUGUST 1985 WE STARTED BACK TO WORK, LETTING A CONTRACT FOR CHANNEL WORK ON SOUTH FORK FORKED DEER RIVER. FUNDS REQUESTED FOR FY 1987 WILL BE USED TO COMPLETE THIS ITEM, INITIATE THE NEXT ITEM OF CHANNEL WORK AND RELOCATE A PIPELINE.

TENSAS BASIN

IN THE TENSAS BASIN PROJECT LOCATED IN SOUTHEASTERN ARKANSAS AND NORTHEASTERN LOUISIANA, FUNDS REQUESTED IN FY 1987 WILL BE USED TO INITIATE AND COMPLETE THE LAST REMAINING SCHEDULED ITEMS OF RECREATION AT LAKE CHICOT, COMPLETE THE TENSAS-COCODRIE PUMPING PLANT AND DIVERSON CHANNEL, AND INITIATE A LEVEE ENLARGEMENT ITEM IN THE RED RIVER BACKWATER AREA. THE LAKE CHICOT PUMPING PLANT BECAME OPERATIONAL IN APRIL 1985.

BUDGET DOCUMENTS FOR THIS PROJECT SHOW THE SEPARABLE ELEMENTS BELOW RED RIVER AND CHANNEL WORK ON THE TENSAS RIVER TO BE COST-SHARED CONSISTENT WITH THE COST-SHARING PRINCIPLES AND FINANCING CONCEPTS AGREED TO BY THE ADMINISTRATION AND THE SENATE MAJORITY LEADERSHIP.

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YAZOO BASIN

THE YAZOO BASIN IS LOCATED IN NORTHWESTERN MISSISSIPPI. OUR FY 1987 FUNDING REQUEST IS $24 MILLION.

IN THE UPPER YAZOO PROJECTS AREA WE HAVE COMPLETED 54 MILES OF CHANNEL WORK AND HAVE AN ADDITIONAL 1.6 MILES UNDER CONTRACT WHICH WILL BE COMPLETED IN FY 1986. WITH FUNDS REQUESTED IN FY 1987 WE WILL INITIATE A CONTRACT FOR THE NEXT 9.2 MILES OF CHANNEL AND LEVEE WORK, INITIATE CONSTRUCTION ON EAST HOLLIE LAKE DRAINAGE STRUCTURE, AND CONTINUE WORK ON THE FORT PEMBERTON CONTROL STRUCTURE.

IN THE MAIN STEM UNIT FUNDS WILL BE USED TO COMPLETE A MAJOR DRAINAGE STRUCTURE AND LEVEE SECTION AT BEE LAKE.

ON STEELE BAYOU IN THE BIG SUNFLOWER UNIT WE WILL CONTINUE ONE ITEM OF CHANNEL WORK AND INITIATE ANOTHER ITEM IN THE SWAN LAKE AREA.

IN THE TRIBUTARIES UNIT WE WILL CONTINUE LEVEE WORK ON PELUCIA CREEK.

WITH FUNDS PROVIDED IN FY 1986 WE ARE CONTINUING THE DEMONSTRATION EROSION CONTROL PROGRAM, A JOINT EFFORT BETWEEN THE CORPS OF ENGINEERS AND THE SOIL CONSERVATION SERVICE IN 6 WATERSHEDS OF THE YAZOO BASIN WITH THE SCHEDULED AWARD OF 16 CONTRACTS.

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IN THE YAZOO BASIN PROJECT THE ROCKY BAYOU AND YAZOO BACKWATER PUMPING PLANT UNITS ARE CONSIDERED SEPARABLE ELEMENTS AND AS SUCH ARE PRESENTED TO SHOW COST-SHARING CONSISTENT WITH THAT AGREED TO BETWEEN THE ADMINISTRATION AND THE SENATE MAJORITY LEADERSHIP. REMAINING WORK IN BOTH OF THESE UNITS ARE UNSCHEDULED.

MAINTENANCE

THE PROGRAM REQUEST OF APPROXIMATELY $104.8 MILLION FOR THE COMPREHENSIVE MISSISSIPPI RIVER AND TRIBUTARIES PROJECT SHOULD BE ADEQUATE FOR CONTINUED DAY-TO-DAY OPERATION AND MAINTENANCE. OUR REQUEST INCLUDES FUNDS FOR INITIATION OF OPERATION OF THE TENSAS-COCODRIE PUMPING PLANT IN FY 1987.

MR. CHAIRMAN, THIS COMPLETES MY REMARKS.

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Mr. BEVILL. Thank you. We will insert the justification material for the Lower Mississippi Valley Division and Mississippi River Commission in the record at this point, without objection.

[The justifications follow:]

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Justification of Estimates for Civil Functions Activities
Department of the Army, Corps of Engineers
Fiscal Year 1987

SUMMARY LOWER MISSISSIPPI VALLEY DIVISION

	FY 1986 Allocation $	FY 1987 Request $	Increase or Decrease $
General Investigations			
Surveys Including Phase I Stage of AE&D	5,468,000	6,039,000	+571,000
Continuation of Planning and Engineering	3,420,000	1,965,000	-1,455,000
Advance Engineering & Design	0	0	0
Construction, General			
Continuation of Engineering and Design	0	0	0
Construction	234,345,000 2/	196,330,000 2/	-38,015,000
Major Rehabilitation (Continuing) and Dam Safety Assurance	0	0	0
Operation and Maintenance, General			
Project Operation and Maintenance	145,000,000	143,707,000	-1,293,000
Major Rehabilitation (New)	0	0	0
Total	388,233,000 1/	348,041,000	-40,192,000

1/ Does not reflect reductions required by the balanced budget and Emergency Deficit Control Act of 1985. (Public Law 99-177).
2/ Includes $2,000,000 to be derived from the Inland Waterways Funds.

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APPROPRIATION TITLE: General Investigation, Fiscal Year 1987 — Lower Mississippi Valley Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
1. SURVEYS - NEW					
a. Navigation - None					
b. Flood Damage Prevention - The amount of $500,000 is requested in Fiscal Year 1987 to initiate and complete one flood damage prevention reconnaissance study.					
LOUISIANA					
Louisiana Coastal Area Hurricane Protection	500,000	0	0	500,000	0

The study area includes all lands subject to tidal overflow in 20 coastal parishes. In 1980, the population of this area was 1,630,000 and is projected to reach 2,390,000 by the year 2040. This area is predominantly estuarine marsh, bays, and sounds interlaced with waterways. The marsh-estuarine complex is a multi-use area of many functions. The area is a major food supply source serving the nation. The barrier islands and marshlands protect an extensive waterway transportation system that includes the Gulf Intracoastal Waterway, the Mississippi River-Gulf Outlet, and many other Federal navigation projects. The area provides a barrier to the intrusion of saltwater into freshwater sources that sustain coastal communities, industry, and agriculture. The barrier islands and the marshes are the first line of defense against devastating hurricane tidal surges. Land loss is a serious threat. Coastal marshes are being converted to open water at a rate of 39 square miles per year (1980), and this trend is projected to continue. The tentative local sponsor is the Louisiana Department of Transportation and Development. Reconnaissance studies conducted on Land Loss and Marsh Creation in Fiscal Year 1984 concluded that continued deterioration of the barrier islands and marsh loss will increase coastal communities' susceptibility to hurricane-induced flooding. This study will be directed toward responding to the problems of hurricane-induced flooding. Fiscal Year 1987 funds will be used to initiate and complete the reconnaissance phase of the study. The reconnaissance phase is scheduled to be completed in January 1988.

c. Shoreline Protection - None

d. Special Studies - None

Total - Surveys - NEW	500,000	0	0	500,000	0

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APPROPRIATION TITLE: General Investigation, Fiscal Year 1987 — Lower Mississippi Valley Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

2. SURVEYS - CONTINUING

a. Navigation Studies: The amount of $675,000 is requested for Fiscal Year 1987 to continue two studies.

LOUISIANA

Bayou Lafourche and Lafourche Jump Waterway	180,000	0	80,000	50,000	50,000

Local interests have expressed a desire for further modification of the existing navigation channel on Bayou Lafourche from the Gulf to Port Fourchon to provide increased dimensions in anticipation of further development in the Port Fourchon area. This channel provides access to the Gulf for vessels servicing the offshore oil rigs, the Louisiana Offshore Oil port, and a large commercial fisheries industry operating in the central Gulf. It is also available as a harbor of refuge for evacuation of the offshore rigs, equipment, and men during hurricanes. The currently authorized project with dimensions of 12 by 125 feet completed in 1963 under authority of the River and Harbor Act of 14 July 1960 was enlarged by the Greater Lafourche Port Commission in 1968 to 20 by 300 feet from Mile 4.0 to Mile 0 and 30 by 300 from Mile 0 to Mile -3.0. The Greater Lafourche Port Commission has expressed their willingness to cost share up to 50 percent of the feasibility cost of study. The purpose of the study is to assess the feasibility of Federal assumption of maintenance of the enlarged channel from Port Fourchon to the Gulf after cost sharing is implemented. In the past, investigation of the feasibility of increasing channel dimensions to 25 by 400 feet to meet anticipated needs of future navigation was also requested. The increase of $100,000 in the study cost is for the Federal portion of the Feasibility Report. Fiscal Year 1986 funds are being used to initiate and complete the reconnaissance phase at full Federal expense. The funds requested for Fiscal Year 1987 will be used to initiate the Federal share of the feasibility phase of the study. The preliminary estimated cost of the feasibility phase is $200,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows.

Total Estimated Study Cost	$280,000
Reconnaissance Phase (Federal)	80,000
Feasibility Phase (Federal)	100,000
Feasibility Phase (Non-Federal)	100,000

The reconnaissance phase is scheduled to be completed in February 1987. The feasibility study is scheduled to be completed in February 1989.

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APPROPRIATION TITLE: General Investigation, Fiscal Year 1987 — Lower Mississippi Valley Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
LOUISIANA					
Gulf Intracoastal Waterway					
Louisiana - Texas Section	4,270,000	2,348,000	550,000	625,000	747,000

The Louisiana-Texas Section of the Gulf Intracoastal Waterway extends continuously from the eastern boundary of the State of Louisiana to Brownsville, Texas, a distance of 667 miles. The alternate route from Morgan City to Port Allen, Louisiana, adds 64 miles, making the total project length 731 miles. The objective of the investigation is to determine if the project should be modified in any way, particularly with regard to widening and deepening the existing and/or authorized channels and structures. The increase of $30,000 in the study cost estimate is due to salary increases. Fiscal Year 1986 funds are being used to complete the economic system analysis studies, initiate the transportation rate analysis, initiate evaluation of erosion problems, and continue plan formulation, environmental design and cost studies. Fiscal Year 1987 funds will be used to continue the transportation rate analysis and other economic studies, and initiate preliminary engineering and design efforts. The study report is scheduled for completion in February 1989.

Total - Navigation Studies	4,450,000	2,348,000	630,000	675,000	797,000

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

b. Flood Damage Prevention Studies: The amount of $3,714,000 is requested in Fiscal Year 1987 for continuation of nine studies.

ARKANSAS

Ouachita River Basin, Arkansas and Louisiana	8,390,000	7,036,000	736,000	400,000	218,000

The Ouachita River Basin study area contains about 16,000 square miles and is located in south-central Arkansas and north-central Louisiana. Major streams located in the basin are Ouachita, Saline, Little Missouri, and Caddo Rivers and Bayous D'Arbonne and Bartholomew. The study will address major water resources needs and problems such as rural and urban flooding, navigation, hydropower, water quality, bank caving, recreation, and the environment. Interim studies are underway on the Arkansas Lakes. The increase in the study cost estimate includes $20,000 for salary increases. Fiscal Year 1986 funds are being used to continue study efforts on the overall Basin study and the Arkansas Lakes Interim, complete the Monroe-West Monroe Interim, and the Ouachita River Levees Interim. Fiscal Year 1987 funds will be used to complete the Arkansas Lakes Interim Study and continue study efforts on the basinwide study. The study reports are scheduled for completion as follows: Monroe-West Monroe Study - September 1986; Ouachita River Levees - April 1986; Arkansas Lakes - September 1987; Overall Basin Study - June 1988.

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APPROPRIATION TITLE: General Investigation, Fiscal Year 1987 — Lower Mississippi Valley Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
ILLINOIS					
Alexander-Pulaski Counties	1,300,000	291,000	0	400,000	609,000

The study area consists of a major portion of the five southernmost counties in Illinois: Alexander, Pulaski, Union, Johnson, and Massac. The area comprises some 800 square miles. The major industry of the region is agriculture. The 1980 population for the study area was approximately 36,000. The area involved includes portions of the St. Louis, Memphis, and Louisville Districts. The area is plagued with frequent drainage, flooding, and seepage problems. Flooding is a problem since the area lies at the junction of two major inland river systems, the Mississippi River and Ohio River. The region has hilly areas with narrow stream valleys which cause local flash floods. The purpose of this study is to determine if there is an economical engineering and environmentally feasible solution to the seepage and flooding problems in the study area. The Initial Evaluation Report identified the area problems and alternatives to solve them. The Fiscal Year 1987 funds will be used to initiate hydraulic modeling, field surveys for mapping and soil conditions, and economic and environmental studies. The study report is scheduled for completion in September 1989.

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APPROPRIATION TITLE: General Investigation, Fiscal Year 1987 — Lower Mississippi Valley Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
LOUISIANA					
Amite River and Tributaries	2,145,000	750,000	300,000	400,000	695,000

The study covers the entire Amite River Basin which includes portions of East Baton Rouge, Ascension, Livingston, East Feliciana, St. Helena, Iberville, St. James and St. John the Baptist Parishes in Louisiana and Amite County in Mississippi. Major tributaries of the Amite River are the Comite River and Bayou Manchac which drain the urban areas of Baton Rouge, Baker, Zachary, Gonzales, Sorrento, and Denham Springs. Flooding within the basin originates from excessive rainfall resulting in headwater and backwater overflow of the Amite River and tributary streams. Extensive flooding occurs in and around the cities of Baton Rouge, Denham Springs, Gonzales, and Sorrento. Alternatives that would be considered to reduce the flood threat include reservoirs, channel improvements, diversions, levees, pumping stations, and nonstructural measures. The Feasibility Phase was initiated in Fiscal Year 1985 and is being continued in Fiscal Year 1986 based on agreement with the local sponsor to share 50 percent of the costs of the feasibility phase after cost sharing is implemented. The effective date of implementation is 15 March 1986. The Louisiana Department of Transportation and Development have expressed their support for the study and executed a cost-sharing agreement which was signed on 5 February 1985. Fiscal Year 1986 funds are being used to continue the Federal share of the feasibility phase studies for the Comite River diversion and initiate feasibility phase studies of the East Baton Rouge Parish. Fiscal Year 1987 funds will be used to continue feasibility studies of the Comite River and improvements on tributary streams of the Amite River in East Baton Rouge Parish and to initiate studies for Livingston Parish. The tributary streams include: Jones and Hurricane Creeks, Bayou Fountain and Monte Sano Bayou. The estimated cost of the feasibility phase is $3,000,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$3,450,000
Reconnaissance Phase (Federal)	450,000
Feasibility Phase (Federal)	1,695,000
Feasibility Phase (Non-Federal)	1,305,000

The reconnaissance phase was completed in March 1985. The feasibility study is scheduled for completion in September 1990.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Louisiana Coastal Area Land Loss and Marsh Creation	1,515,000	539,000	150,000	220,000	606,000

Louisiana coastal marshes are being converted to open water at a rate of 39 square miles per year (1980), and this trend is expected to continue in the future. The continued loss of marshland will adversely affect commercial fish and wildlife resources and urban and rural development. Investigations will evaluate plans to reduce land loss and create marsh. The feasibility phase was initiated in Fiscal Year 1985 and is being continued in Fiscal Year 1986 based on agreement with the Louisiana Department of Natural Resources to share 50 percent of the feasibility phase after cost sharing is implemented. The effective date of implementation is 15 April 1986. Fiscal Year 1986 funds are being used to continue feasibility-phase engineering, environmental, and economic investigations to develop a plan for creating marsh in Plaquemines, St. Bernard, and Jefferson Parishes, and to continue investigations to determine the true monetary value of the marsh. Fiscal Year 1987 funds will be used to continue feasibility-phase engineering, environmental, and economic studies to develop a plan for creating marsh in Plaquemines, St. Bernard, and Jefferson Parishes. The estimated cost of the feasibility phase is $2,020,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$2,420,000
Reconnaissance Phase (Federal)	400,000
Feasibility Phase (Federal)	1,115,000
Feasibility Phase (Non-Federal)	905,000

The reconnaissance phase was completed in April 1985. The feasibility study is scheduled for completion in November 1990.

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APPROPRIATION TITLE: General Investigation, Fiscal Year 1987 — Lower Mississippi Valley Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Mermentau, Vermilion, and Calcasieu Rivers and Bayou Teche	4,950,000	2,230,000	160,000	460,000	2,100,000

The study area, encompassing all of the drainage basins of the Mermentau, Vermilion, and Calcasieu Rivers and Bayou Teche, a composite drainage area of about 11,500 square miles, is located in southwestern Louisiana between the Atchafalaya Basin and the Sabine River. This area contains 16 parishes, with a population of 1,026,000 (1980 census). Included under this study are some 30 features of improvement or modification to existing improvements dealing with flood control, major drainage, navigation, water supply, water quality control, saltwater intrusion, recreation, fish and wildlife, and other related water and land resources. Fiscal Year 1986 funds are being used to initiate the data collection program on the Grand and White Lakes Interim and to complete the feasibility report on the Lake Charles Ship Channel. Fiscal Year 1987 funds will be used to complete the data collection program and initiate work on the mathematical model on the Grand and White Lakes Interim. The increase of $35,000 in the study cost estimate is due to salary increases. The study report for Lake Charles Ship Channel is scheduled for completion in August 1986 and for Grand and White Lakes Water Management Area in December 1991.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Upper Bayou Teche	385,000	0	60,000	140,000	185,000

The study area is located in central Louisiana to the west of the Atchafalaya Basin. Numerous Federal drainage and flood control projects in the area have produced a complicated drainage system. Local interests have requested a study of the upper end of Bayou Teche, which is a tributary of Bayou Courtableau in St. Landry Parish. They desire the enlargement of the upper reach of Bayou Teche to increase low flows to the Teche and Vermilion Basins and to reduce low-to-average stages in Bayou Courtableau. During low-to-average flow conditions, stages in Bayou Courtableau are held high for diversion of flows to the Teche and Vermilion Basins for water supply, irrigation, and pollution abatement. The Teche-Vermilion Basins water supply project, which was completed in 1982, supplements low flows in Bayou Courtableau with flows pumped from the Atchafalaya River. Since project completion, the full pumping capacity of the project has not been utilized due to the inadequate flow capacity of Upper Bayou Teche. Alternatives would be limited primarily to the dredging of Bayou Teche. The reconnaissance phase was fully funded with $110,000 contributed by the Teche Vermilion Freshwater District in Fiscal Year 1985 upon approval of the Committees on Appropriations of the United States Senate and House of Representatives. Fiscal Year 1986 funds are being used to initiate the feasibility phase studies. The preliminary estimated cost of the feasiblity phase is $550,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. The Teche-Vermilion Freshwater District has expressed willingness to cost share the feasibility phase. Credit will be given to the Teche-Vermilion Freshwater District for the contribution towards the non-Federal share of the feasibility phase. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$660,000
Reconnaissance Phase (Non-Federal)	110,000
Feasibility Phase (Federal)	385,000
Feasibility Phase (Non-Federal)	165,000

The reconnaissance phase is scheduled for completion in June 1986. The Division Engineer's feasibility report is scheduled for completion in December 1988.

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APPROPRIATION TITLE: General Investigation, Fiscal Year 1987 — Lower Mississippi Valley Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
MISSISSIPPI					
Pearl River Basin, Mississippi and Louisiana	8,600,000	6,698,000	1,170,000	590,000	142,000

The Pearl River Basin covers about 8,760 square miles and comprises most of the south-central portions of Mississippi and a small part of southeastern Louisiana. Problems and needs that have been identified include flooding at Jackson, Mississippi, Slidell, Louisiana and numerous other communities; rural flooding; bank erosion; the extension of navigation to Picayune, Mississippi on East Pearl River and the authorized navigation on West Pearl River; the enhancement of ecological conditions in the lower Pearl River Basin; and providing an adequate water supply to the lower Pearl River Basin to meet future needs. The increase of $190,000 in the study cost estimate includes $31,000 for salary increases, $60,000 for additional study efforts in connection with navigation to Port Bienville, Mississippi, and $99,000 for additional study efforts in connection with the flood control study for Jackson, Mississippi. Fiscal Year 1986 funds are being used to continue studies on other flooding problems in the basin under the Interim Flood Control Study; to complete studies on navigation to Port Bienville, Mississippi; and to continue other navigation studies under the basinwide study effort. Fiscal Year 1987 funds will be used to complete the flood control studies for Carthage, Mississippi, and preliminary evaluations for the Bogue Chitto subbasin; continue flood control studies at Columbia and Monticello, Mississippi, and Bogalusa, Louisiana; and complete the navigation studies on the Lower Pearl River. The flood control report for Jackson, Mississippi, recommending the Shoccoe Dry Dam was approved by the Board of Engineers for Rivers and Harbors in June 1985. The United States Army Corps of Engineers, Washington, D. C., is coordinating the report with State and departmental review agencies before transmitting the report to the Secretary of the Army. The Notice of Report on Slidell, Louisiana, and Pearlington, Mississippi, was issued on 30 September 1985, recommending the construction of a 15-mile levee system to protect the Slidell area. No plans were feasible for Pearlington, Mississippi. The final report for Slidell-Pearlington is currently under review by the Board of Engineers for Rivers and Harbors. A report on navigation to Port Bienville, Mississippi is scheduled for August 1986. The Flood Control Interim is scheduled for completion in June 1988. The Overall Basin Study Report is scheduled for completion in April 1989.

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APPROPRIATION TITLE: General Investigation, Fiscal Year 1987 — Lower Mississippi Valley Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
MISSOURI					
Creve Coeur Creek	1,100,000	0	500,000	50,000	550,000

The study area covers the Creve Coeur Creek watershed located in north St. Louis County, Missouri. It encompasses about 40 square miles with a 1980 population of approximately 70,000. Parts of several of the larger communities such as Bridgeton, St. Ann, Overland, Creve Coeur, Baldwin, and Maryland Heights are located in the tributary areas. This study will address flooding and related land resources problems, needs, and opportunities. The Metropolitan St. Louis Sewer District is the potential local sponsor and has verbally expressed willingness to cost share the feasibility phase of study effort, contingent upon the results of the reconnaissance phase. Fiscal Year 1986 funds are being used to initiate the reconnaissance phase at full Federal expense. The funds for Fiscal Year 1987 will be used to initiate the feasibility phase of the study. The preliminary estimated cost of the feasibility phase is $1,200,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$1,700,000
Reconnaissance Phase (Federal)	500,000
Feasibility Phase (Federal)	600,000
Feasibility Phase (Non-Federal)	600,000

The reconnaissance phase is scheduled for completion in March 1987. The feasibility study is scheduled for completion in March 1989.

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APPROPRIATION TITLE: General Investigation, Fiscal Year 1987 — Lower Mississippi Valley Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
St. Louis Metropolitan Area, Missouri and Illinois	11,860,000	9,223,000	864,000	1,054,000	719,000

The River Des Peres study will determine the feasibility of plans to reduce flood damage potential and to enhance recreational opportunities along the stream in the city of St. Louis and St. Louis County. The American Bottoms study will seek solutions to flood damages caused by rising ground water and runoff, environmental degradation, and lack of outdoor recreational opportunities in a 175-square mile flood plain area in Madison, St. Clair, and Monroe Counties, Illinois. The Coldwater Creek study will determine the feasibility of plans to reduce flood damage potential and to enhance recreational opportunities along the stream in north St. Louis County. Flood damages as a result of the 1973 flood have been estimated at more than $16,000,000 in the River Des Peres watershed and $127,000,000 in the American Bottoms Area. A localized storm in July 1978 caused flash flooding in the River Des Peres area resulting in more than $2,000,000 in property damages. Flood damages sustained in April 1979 were estimated at $68,020,000 in the River Des Peres area, and $6,000,000 in the American Bottoms area. The existing Mississippi River Federal levee system for the American Bottoms area prevented an estimated $4,000,000 additional flood damages in 1979. Significant flood damages were sustained in the Coldwater Creek area as a result of the localized storms in June 1957, July 1978, April 1979, and July 1982. The study cost estimate increase of $380,000 is for salary increases and additional investigations, and data collection and analysis for the American Bottoms interim. Fiscal Year 1986 funds are being used to continue three interim studies, American Bottoms, Coldwater Creek, and the River Des Peres interim studies. Fiscal Year 1987 funds will be used to continue the Coldwater Creek Interim study and complete the River Des Peres and American Bottoms Interim reports. The interim study reports are scheduled for completion as follows: American Bottoms - September 1987, River Des Peres - September 1987, and Coldwater Creek - March 1988.

Total - Flood Damage Prevention Studies	40,245,000	26,767,000	3,940,000	3,714,000	5,824,000

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

c. Shoreline Protection Studies: The amount of $240,000 is requested in Fiscal Year 1987 to continue one study.

LOUISIANA

Louisiana Coastal Area - Shoreline and Barrier Island Erosion	1,670,000	465,000	200,000	240,000	765,000

Nearly all of Louisiana's shoreline is receding, except in the vicinity of the Atchafalaya and Mississippi River deltas where new land is being formed. The beaches and barrier islands act as buffers by absorbing much of the wave attack from the Gulf of Mexico. The barrier islands are receding at rates of 10 to 60 feet per year. The continued deterioration of the barrier islands would result in the exposure of valuable marshes to direct attack from the Gulf. Loss of the marshes would have an adverse impact on fish and wildlife resources and existing developments in the area. The feasibility phase was initiated in Fiscal Year 1985 and is being continued in Fiscal Year 1986 based on agreement with the local sponsor to share 50 percent of the costs of the feasibility phase after cost sharing is implemented. The effective date of implementation is 15 April 1986. Louisiana Department of Natural Resources signed a contract to cost share the feasibility portion of the study on 26 December 1984. Fiscal Year 1986 funds are being used to continue more detailed engineering, economic, and environmental feasibility studies and initiate feasibility study of erosion in the Holly Beach area. Fiscal Year 1987 funds will be used to continue engineering, economic, and environmental feasibility studies of shore and barrier island erosion in Terrebonne Parish and the Holly Beach area. The estimated cost of the feasibility phase is $2,510,000. A summary of cost sharing is as follows:

Total Estimated Study Cost	$2,800,000
Reconnaissance Phase (Federal)	290,000
Feasibility Phase (Federal)	1,380,000
Feasibility Phase (Non-Federal)	1,130,000

The reconnaissance phase was completed in April 1985. The feasibility study is scheduled for completion in September 1991.

Total - Shoreline Protection Studies	1,670,000	465,000	200,000	240,000	765,000

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

d. Special Studies: The amount of $810,000 is requested in Fiscal Year 1987 to continue two studies.

Louisiana Coastal Area - Water Supply	2,233,000	561,000	262,000	430,000	980,000

Most of the communities in the coastal area are dependent on surface water supplies. These supplies are frequently subject to saltwater intrusion and occasionally to water quality degradation. Most of the aquifers in the area are experiencing encroachment of saltwater. The feasibility phase was initiated in Fiscal Year 1985 and is being continued in Fiscal Year 1986 based on agreement with the local sponsor to share 50 percent of the costs of the feasibility phase after cost sharing is implemented. The effective date of implementation is 15 April 1986. The Louisiana Department of Natural Resources entered into a contract to cost share in the feasibility portion of the study on 26 December 1984. Fiscal Year 1986 funds are being used to continue detailed studies of water supply problems. Fiscal Year 1987 funds will be used to continue engineering, economic, and environmental studies. The cost of the feasibility phase is $3,400,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$3,800,000
Reconnaissance Phase (Federal)	400,000
Feasibility Phase (Federal)	1,833,000
Feasibility Phase (Non-Federal)	1,567,000

The reconnaissance phase was completed in March 1985. The feasibility study is scheduled for completion in April 1991.

APPROPRIATION TITLE: General Investigation, Fiscal Year 1987 — Lower Mississippi Valley Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Meramec River Basin	700,000	120,000	100,000	480,000	0

The Meramec River Basin comprising 3,980 square miles extends about 100 miles southwesterly from St. Louis, Missouri, into the Ozark highlands. The drainage system consists of the Meramec River which enters the Mississippi River 161 miles above the mouth of the Ohio River, and its two principal tributaries, the Big and Bourbeuse Rivers. The study would address flood control damages, water quality, irrigation, recreation, water supply and other water-related concerns. Alternatives to be evaluated include levees, reservoirs not on the main stem of the Meramec River, channel improvements and nonstructural measures. The study cost estimate increase of $100,000 is due to the expanded scope of the study to include other purposes. Fiscal Year 1986 funds are being used to initiate a full-scale reconnaissance study in the traditional manner. Fiscal Year 1987 funds would be used to complete the reconnaissance phase. The reconnaissance phase is scheduled for completion in September 1987.

Total - Special Studies	2,935,000	681,000	362,000	910,000	982,000
Total - Surveys - Continuing	49,300,000	30,261,000	5,132,000	5,539,000	8,368,000

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APPROPRIATION TITLE: General Investigation, Fiscal Year 1987 — Lower Mississippi Valley Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

3. Surveys - CONTINUATION OF PLANNING AND ENGINEERING STUDIES

a. Navigation Studies: None.

b. Flood Damage Prevention: The amount of $1,815,000 is requested for Fiscal Year 1987 to continue three flood damage prevention studies.

MISSISSIPPI

Pearl River Shoccoe Dam	2,800,000	0	750,000	1,000,000	1,050,000

The study area is located in the Upper Pearl Basin and in the vicinity of Jackson, Mississippi. The area of concern is in Jackson and its environs, including the towns of Flowood, Pearl, and Richland, Mississippi. The study area also includes the upstream counties of Madison, Leake, and Scott and the downstream counties of Simpson, Copiah, Lawrence, and Marion. The recommended plan consists of a dry dam installed on the Pearl River at a site about 40 miles upstream of Jackson in the vicinity of Shoccoe, Mississippi. The earthfill dam would be about 45 feet high and 2.8 miles long, controlling a drainage area of 2,700 square miles, or about 87 percent of the drainage area of the Pearl River Basin. The dam would regulate floods up to the magnitude of the April 1979 record flood discharging flows through an ungated service spillway. About 39,000 acres would be acquired for the dry reservoir. Most of this would be acquired by easement, allowing present use of the area to continue within easement restrictions. Average annual physical flood damages of $10,838,000 were calculated for the Greater Jackson Area. The recurrence of the 1979 flood of record would flood 3,500 homes and 1,400 businesses and cause $640,000,000 in physical damages. Shoccoe Dam would reduce flood stages from 5 to 7 feet in Jackson during major floods, thereby eliminating over 90 percent of the total average annual damages. The October 1985 estimated project first cost is $81,700,000. Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to pay 35 percent, or $28,595,000 of the total project construction cost with a minimum cash contribution equal to 5 percent of the total project construction cost with the option of furnishing lands, easements, rights-of-way and relocations as a credit toward the non-Federal cost; and $73,000 annually for operation and maintenance. Local interests have expressed their willingness to provide a share of the project costs. Average annual benefits are $8,999,000; all of this is for flood control. The benefit-to-cost ratio is 1.2 to 1 at 8-5/8 percent. Fiscal Year 1986 funds are being used to initiate the General Design Memorandum. Fiscal Year 1987 funds would be used to continue the General Design Memorandum. Continuation of planning and engineering is scheduled to be completed in September 1988.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
MISSOURI					
Cape Girardeau - Jackson, MO	1,600,000	0	0	500,000	1,100,000

The study area is within Cape Girardeau County covering approximately 210 square miles of rural and urban lands in southeast Missouri, including the Cape La Croix Creek watershed flood plain areas bordering the Mississippi River and Little River Diversion Channel, and urban areas including the towns of Fruitland, Gordonville, and Dutchtown, as well as the incorporated areas of Cape Girardeau and Jackson, Missouri. Based on 1980 census, the population of the study area is 42,000. The occurrence of a 100-year flood event on Cape La Croix Creek and Walker Branch would cause damage to 246 residential structures and 176 commercial/institutional structures. The recommended project is for local flood protection and recreation. The proposed project includes approximately 3 miles of channel improvements, 8 bridge replacements, 1 dry detention reservoir, and recreational/environmental features. The recommended plan would reduce about 85 percent of the average annual flood damages. The Cape La Croix Creek and Walker Creek Branch Levee and Drainage District has expressed willingness to cost share construction of the project. The October 1985 estimated project first cost is $25,100,000. Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $2,754,000; modify or relocate buildings, utilities, roads and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $1,632,000; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $640,000, and bear all costs of operation, maintenance and replacement of recreation facilities presently estimated at $14,000 annually; pay 35 percent of the costs presently allocated to flood control, less the value of lands, easements, right-of-way, presently estimated at $4,399,000; and bear all costs of operation, maintenance and replacement of flood control facilities, presently estimated at $94,000 annually. The average annual benefits are $3,866,000, of which $3,670,000 are for flood damage reduction and $196,000 are for recreation. The benefit-to-cost ratio is 1.7 to 1 at 8-5/8 percent. The Fiscal Year 1987 funds will be used to initiate planning and engineering studies for a Reevaluation Report. Continuation of planning and engineering is scheduled to be completed in September 1989.

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APPROPRIATION TITLE: General Investigation, Fiscal Year 1987 — Lower Mississippi Valley Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Maline Creek, MO	2,500,000	250,000	325,000	465,000	1,460,000

The Maline Creek area includes a small northern part of the City of St. Louis, portions of unincorporated St. Louis County, and all or parts of 22 municipalities. The 25-square mile watershed has 37.1 miles of streams consisting of 10.6 miles of main channels with 10 major tributaries. Maline Creek originates near the St. Louis Lambert Airport and flows in an easterly direction into the Mississippi River approximately 8 miles downstream from the confluence of the Mississippi and Missouri Rivers. The highly urbanized area had a population of 126,000 people in 1980 and urban development covers 98 percent of the drainage area. There are about 1,400 residential structures and 30 commercial structures in the 10-year flood plain area. The recommended project is for local flood protection, recreation and environmental improvements. The recommended plan consists of aquatic habitat structures, fish ponds, open space land acquisition, outdoor recreation development, litter and debris control, dry detention reservoirs, relocations, flood plain land acquisition, channel improvements, low-level flood protection, interior drainage, clearing and snagging, and bridge modifications. The recommended plan of improvement will eliminate 90 percent of the annual flood damages. The October 1985 estimated project first cost is $62,900,000. Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way and required disposal areas, presently estimated at $16,055,000; modify or relocate buildings, utilities, roads and other facilities, presently estimated at $4,012,000; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $3,264,999, and bear all costs of operation, maintenance and replacement of recreation facilities, presently estimated at $142,000 annually; pay 5 percent in cash of the costs allocated to flood control, presently estimated at $1,928,350, and bear all costs of operation, maintenance and replacement of flood control facilities, presently estimated at $419,000 annually; pay 33-1/3 percent of the separable and joint costs allocated to fish and wildlife enhancement, presently estimated at $1,990,000 and bear all costs of operation, maintenance and replacement of fish and wildlife facilities, presently estimated at $55,000 annually. Average annual benefits are $6,765,000, of which $5,658,000 are for flood damage reduction and $1,107,000 are for recreation. The benefit-to-cost ratio is 1.16 to 1 at 8-5/8 percent. Fiscal Year 1986 funds are being used to reexamine hydrologic and economic data based on changed conditions in the area. Fiscal Year 1987 funds will be used to continue planning and engineering studies for a Reevaluation Report and General Design Memorandum. Continuation of planning and engineering is scheduled to be completed in September 1989.

Total - Flood Damage Prevention	6,900,000	250,000	1,075,000	1,965,000	3,610,000
Total - Continuation of Planning and Engineering	6,900,000	250,000	1,075,000	1,965,000	3,610,000

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APPROPRIATION TITLE: General Investigation, Fiscal Year 1987 — Lower Mississippi Valley Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
c. Shoreline Protection Studies: None					
d. Special Studies: None					
e. Comprehensive Studies: None					
4. Phase I Stage of Advance Engineering and Design - NEW: None					
5. Phase I Stage of Advance Engineering and Design - CONTINUING: None					
6. Phase I Stage of Advance Engineering and Design - CONTINUATION OF PLANNING AND ENGINEERING STUDIES: None					
GRAND TOTAL	56,700,000	30,511,000	6,207,000	8,004,000	11,978,000

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APPROPRIATION TITLE: Construction, General - Locks and Dams (Navigation)

PROJECT: Ouachita and Black Rivers, Arkansas and Louisiana (Continuing)

LOCATION: A navigation channel in the Red, Black, and Ouachita Rivers extending 382 miles from Old River, Louisiana, to Camden, AR.

AUTHORIZATION: 1960 and 1970 River and Harbor Acts.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 3.5 to 1 at 2-7/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1963) was 1.6 to 1. The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost
Estimated Federal Cost	$272,000,000	
Estimated Non-Federal Cost	10,150,000	
Cash Contributions 0		
Other 10,150,000		
Total Estimated Project Cost	$282,150,000	
Allocations to 30 September 1985	$210,524,000	
Conference Allowance for FY 1986	4,700,000	
Allocation for FY 1986	3,700,000 2/	
Allocation to Date	214,224,000	79
Allocation Requested for FY 1987	7,880,000	82
Scheduled Balance to Complete After FY 1987	34,088,000	
Unscheduled Balance to Complete After FY 1987	15,808,000 1/	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	91	Sep 1994 1/
Jonesville Lock and Dam	99	Sep 1987
Columbia Lock and Dam	95	Sep 1988
Felsenthal Lock and Dam	85	Sep 1990
Calion Lock and Dam	85	Sep 1994
Open to Limited Navigation		
Jonesville Lock and Dam	-	Jun 1972
Columbia Lock and Dam	-	Jun 1972
Felsenthal Lock and Dam	-	Sep 1984
Calion Lock and Dam	-	Sep 1984

1/ Remaining recreation facilities are not scheduled pending appropriation of funds.
2/ Reflects $1,000,000 reduction assigned as savings and slippage and includes $3,500,000 withheld by USACE pending approval of final design of recreation items.

Division: Lower Mississipi Valley District: Vicksburg Region: Lower Mississippi
Ouachita and Black Rivers, Arkansas and Louisiana

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PHYSICAL DATA

Lands and Damages:
Columbia - Acres: 18,000
Type: Agricultural and Woodland
Improvements: Farm Units
Felsenthal - Acres: 65,000
Type: Agricultural and Woodland
Improvements: Farm Units

Channels:
9 feet deep and 100 feet wide, 382 miles long from Old River, Louisiana, to Camden, Arkansas,
280 miles from Old River, Louisiana, to Crossett, Arkansas, will accommodate 4-barge tow,
102 miles from Crossett, Arkansas, to Camden, Arkansas, will accommodate 2-barge tow.
Crossett Harbor, Felsenthal Pool, 150 feet wide, 2,700 feet long; 400- by 800-foot turning basin.

Locks:
Number: 4, Size - 84 by 600 feet
Dams:
Number: 4, Type - Combination gated bays (50 feet wide) and navigation pass (200 feet wide).

JUSTIFICATION: The controlling dimensions of the previous project waterway are 6.5 feet by 100 feet. There is a need for navigation improvements to provide a 9-foot deep channel in order to permit the free interchange of towing facilities between the Mississippi and Ouachita Rivers. A savings of $9.50 per ton of waterborne freight will be realized from the improved project. In 1984, commerce was 1,027,649 tons. The project is credited with benefits derived from transportation savings from use of waterway, recreational opportunities, area redevelopment, and fish and wildlife enhancement. Average annual benefits and designated redevelopment areas for the total project are as follows:

Benefits	Amount (1 October 1985)
Navigation	$43,149,000
Recreation	4,268,000
Fish and Wildlife	514,000
Area Redevelopment	1,933,000
Refuge	1,312,000
Total Annual Benefits	$51,176,000

Ouachita and Black Rivers, Arkansas and Louisiana

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Redevelopment Areas (PL 89-136)

State and County or Parish	Title	Subsection
Arkansas		
Bradley	IV	(8)
Calhoun	IV	(8)
Cleveland	IV	(2,8)
Columbia	IV	(8)
Dallas	IV	(8)
Drew	IV	(8)
Ouachita	IV	(8)
Union	IV	(6)
Louisiana		
Avoyelles	IV	(2,8)
Caldwell	IV	(8)
Catahoula	IV	(8)
Concordia	IV	(8)
East Carroll	IV	(2,7,8)
Grant	IV	(8)
Jackson	IV	(6)
La Salle	IV	(8)
Louisiana		
Madison	IV	(2,8)
Morehouse	IV	(8)
Ouachita	IV	(8)
Rapides	IV	(8)
Richland	IV	(8)
Tensas	IV	(2,8)
Union	IV	(8)
West Carroll	IV	(1)
Mississippi		
Adams	IV	(8)
Jefferson	IV	(2,7,8)
Wilkinson	IV	(2,8)

+ PL 89-136 858

FISCAL YEAR 1987: The requested amount of $7,880,000 will be applied as follows:

Jonesville Lock and Dam	
Continue:	
Navigation Channels Part I	$2,140,000
Engineering & Design	151,000
Supervision & Administration	228,000
Subtotal Jonesville	$2,519,000
Felsenthal Lock and Dam	
Engineering & Design	15,000
Subtotal Felsenthal	$15,000

Columbia Lock and Dam	
Initiate:	
Navigation Channel Part I	$ 841,000
Navigation Channel Part II	800,000
Navigation Channel Part III	194,000
Miscellaneous Hired Labor	9,000
Engineering and Design	450,000
Supervision & Administration	268,000
Subtotal Columbia	$2,562,000
Calion Lock and Dam	
Complete:	
Calion Access Channel, Part II	$1,975,000
Initiate and Complete:	
Beautification and Landscaping	175,000
Miscellaneous Hired Labor	17,000
Engineering and Design	267,000
Supervision & Administration	350,000
Subtotal Calion	$2,784,000
GRAND TOTAL	$7,880,000

Funds will be used to continue navigation construction in the Jonesville pool, initiate navigation construction in the Columbia pool, and complete construction on Calion Access Channel, Part II.

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NON-FEDERAL COST: Local interests are required to furnish all lands, except fish and wildlife lands, easements and rights-of-way, including relocations at an estimated cost of $10,150,000 broken down as follows:

Lands	$ 5,231,000
Channels and Canals	727,000
Relocations	4,192,000
Roads and Bridges	(3,281,000)
Pipelines	(665,000)
Powerlines	(246,000)
TOTAL	$10,150,000

STATUS OF LOCAL COOPERATION: Louisiana: The State of Louisiana, Department of Transportation and Development, Office of Public Works, is responsible for the requirements of local cooperation for that portion of the project in Louisiana (Columbia and Jonesville pools). Acceptable assurances were furnished in 1962. Supplemental assurances covering the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (PL 91-646) were first requested 25 April 1972. The State of Louisiana, Department of Transportation and Development, Office of Public Works, furnished the assurances on 10 April 1984 and were accepted by the Corps on 11 April 1984.

Arkansas: The county judges of Ashley, Bradley, Calhoun, Ouachita, and Union counties are responsible for the requirements of local cooperation for that portion of the project in Arkansas (Felsenthal and Calion pools). Assurances, including the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (PL 91-646), were accepted 6 December 1971. The local sponsors have furnished the major portions of the rights-of-way required for the project except for navigation channels. These rights-of-way for the navigation channel will be requested, as required in the sequence of constructing the project.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $272,000,000 is an increase of $11,000,000 from the latest estimate ($261,000,000) submitted to Congress. This change includes increases of $5,723,000 for Calion Access Channel Part II based on dredging problems encountered on original contract, $1,407,000 based on contract modifications and quantity overruns, $945,000 based on contract award, $120,000 for addition of dredging contract, $210,000 for additional hired labor based on reanalysis of requirements, and $2,042,000 for Engineering and Design and $1,306,000 for Supervision and Administration based on recent reanalysis of requirements; partially offset by decreases of $719,000 adjustment in contingencies and $34,000 based on actual cost of completed contract.

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STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement (EIS) was filed with the Council on Environmental Quality on 23 December 1974. An EIS Draft supplement was submitted to EPA on 26 April 1984. An EIS supplement will be filed upon completion of the feature DM for the channel work in 3rd Quarter of FY 86.

Beautification and Landscaping: Section 404 of the Clean Water Act is not applicable because the project does not involve the discharge of dredged material or fill material in the waters of the United States.

Navigation Channels: The Clean Water Act Section 404(b)(1) Evaluation will be initiated in 2nd Quarter of FY 86, a certification will also be issued the 3rd Quarter of FY 86, and the District Engineer's signature is expected the 3rd Quarter of FY 86.

Recreation Facilities: Provisions for Section 404 of the Clean Water Act will be met for applicable items prior to advertisement for contract award.

The provisions of Section 404 of the Clean Water Act will be followed as detailed plans for individual work items are developed. Schedule for compliance with Section 404 requirements for items of work with budget year funds are as follows:

Item	Issuance of Public Notice	State Certification	Date of Sign. by DE on Report
Navigation Channels			
Columbia	2nd Qtr FY 86	3rd Qtr FY 86	3rd Qtr FY 86
Jonesville	2nd Qtr FY 86	3rd Qtr FY 86	3rd Qtr FY 86
Felsenthal	2nd Qtr FY 86	3rd Qtr FY 86	3rd Qtr FY 86
Calion	2nd Qtr FY 86	3rd Qtr FY 86	3rd Qtr FY 86

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1956 and for construction in FY 1963.

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a. Fiscal Year 1984:

The following language was contained in House Report 98-217 accompanying the FY 1984 Energy and Water Development Appropriation Act: "The Committee has received testimony on the need to construct access points and recreation facilities on the Ouachita and Black Rivers in the vicinity of the Felsenthal National Wildlife Refuge, Arkansas, in the Felsenthal Pool. Testimony indicates significant prior commitments to local interests to provide access roads, boat ramps, recreation and sanitary facilities. Accordingly, the Committee has included $3.5 million in the bill for the Corps to proceed with this work consistent with prior commitments."

The following language was contained in Conference Report 98-272 accompanying the FY 1984 Energy and Water Development Appropriation Act: "The conferees are aware of Congressional testimony on the need to construct access points and recreation facilities on the Ouachita and Black Rivers in the vicinity of the Felsenthal National Wildlife Refuge, Arkansas, in the Felsenthal Pool. Testimony indicates significant prior commitments to local interests to provide access roads, boat ramps, recreation and sanitary facilities. Accordingly, the conferees have included funds in the bill for the Corps to proceed with this work consistent with prior commitments."

Construction has been completed on Pereogeethe Lake, and Jones Lake access points; Grand Marais and Crossett Harbor access road and parking; Crossett Harbor boat ramp; and the upper ramp at Felsenthal Lock and Dam. Shallow Lake was physically completed in 1st Quarter FY 86. Pine Island will be completed by 2nd Quarter FY 86. Shallow Lake access road was awarded 20 September 1985. Construction will be completed by September 1986.

b. Fiscal Year 1985:

The following language was contained in Senate Report 98-502 accompanying the FY 1985 Energy and Water Development Appropriations Act: "The Committee has appropriated a total of $3,500,000 for this project of which $1,500,000 is made available until expended solely for the construction of access points and recreation facilities at the Felsenthal National Wildlife Refuge."

The following language was contained in House Report 98-755 accompanying the FY 1985 Energy and Water Development Appropriation Act: "The bill includes $3,500,000 for the Ouachita and Black Rivers Project, including an increase of $1,500,000 over the budget to continue the construction of access sites and recreational areas at the Felsenthal National Wildlife Refuge, Arkansas."

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The following language was contained in Conference Report 98-866 accompanying the FY 1985 Energy and Water Development Appropriation Act: "The conference agreement includes $3,500,000 for the Ouachita and Black Rivers project, including $2,500,000 to continue the construction of access sites and recreational areas at the Felsenthal National Wildlife Refuge, Arkansas."

FY 1985 funds for recreation facilities were not released pending submittal and approval of design of recreation facilities. Design is proceeding to secure approval for initiation of construction in FY 1986.

c. Fiscal Year 1986:

The following language was contained in House Report 99-195 accompanying the FY 1986 Energy and Water Development Appropriations Act: "The Committee notes that the fiscal year 1985 Supplemental Appropriations Bill directs the Secretary of the Army to construct recreation facilities, access, and attendant utilities and services at certain projects at full federal expense in keeping with provisions of the original authorizations and Conference Report 98-866 accompanying Public Law 98-360. Accordingly, the Committee has included an additional $3,500,000 for Ouachita and Black Rivers, Arkansas and Louisiana."

The following language was contained in the FY 1986 Energy and Water Development Appropriations Act, Public Law 99-141: "The Corps of Engineers is directed to construct recreation and management facilities at the Ouachita and Black Rivers, Arkansas and Louisiana, in the vicinity of the Felsenthal National Wildlife Refuge at full Federal expense using funds heretofore provided, using the $3,500,000 provided for such purpose in this Act."

Designs of recreation facilities are being finalized with initiation of construction scheduled for the 4th Quarter of FY 1986.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Lower Mississippi Valley
District: Vicksburg

Project: Ouachita and Black Rivers, Arkansas and Louisiana

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Changes (4)	Current (5)
Federal Cost (Price Level)	45,500 (Jul 1961)		261,000 3/		272,000 1/3/
Reason for Change					
a. Price Escalation		(215,500) 3/		(+11,000) 1/	
b. Design Changes		116,613		- 11	
c. Additional Function Added Under General Authorization		9,489		0	
d. Authorized Modifications		2,174			
e. Post-Contract Award and Other Estimating Adjustments		58,462		0	
f. Schedule Changes		24,853 2/		0	
g. Sundry		0		+11,011 2/	
h. Real Estate		0		0	
		3,909		0	

1/ Includes $-11,000 for adjustments in the estimated inflation allowance through the construction period.
2/ Increased $5,723,000 for Calion Access Channel Part II based on dredging problems encountered on original contract, $1,407,000 based on contract modifications and quantity overruns, $945,000 based on contract award, $120,000 for addition of dredging contract, $210,000 for additional hired labor based on reanalysis of requirements, $2,042,000 for Engineering and Design and $1,306,000 for Supervision and Administration based on recent reanalysis of requirements; partially offset by decreases of $719,000 adjustment in contingencies and $34,000 based on actual cost of completed contract.
3/ Includes an allowance for estimated inflation through the construction period.

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APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, NAVIGATION PROJECTS LOCKS/DAMS
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
JONESVILLE LOCK-DAM	51,900,000	40,531,000	135,000	2,519,000	8,715,000
RESERVOIRS	596,000	596,000	0	0	0
DAMS	5,263,000	5,263,000	0	0	0
LOCKS	13,129,000	13,129,000	0	0	0
ROADS,RR,BRIDGES	80,000	80,000	0	0	0
CHANNELS & CANALS	21,580,000	13,479,000	0	2,140,000	5,961,000
RECREATION FACILITY	2,543,000	1,120,000	0	0	1,423,000
BLDGS,GRNDS,UTILS	400,000	400,000	0	0	0
PERM OPER EQUIP	738,000	738,000	0	0	0
ENGR & DESIGN	4,466,000	3,431,000	105,000	151,000	779,000
SUPV & ADMIN	3,105,000	2,295,000	30,000	228,000	552,000
COLUMBIA LOCK-DAM	45,800,000	31,084,000	152,000	2,562,000	12,002,000
LANDS & DAMAGES	3,426,000	3,422,000	4,000	0	0
RESERVOIRS	582,000	582,000	0	0	0
DAMS	4,282,000	4,039,000	0	0	243,000
LOCKS	11,650,000	11,650,000	0	0	0
ROADS,RR,BRIDGES	180,000	180,000	0	0	0
CHANNELS & CANALS	7,878,000	2,729,000	0	1,844,000	3,305,000
RECREATION FACILITY	8,682,000	2,096,000	0	0	6,586,000
BLDGS,GRNDS,UTILS	361,000	361,000	0	0	0
PERM OPER EQUIP	864,000	864,000	0	0	0
ENGR & DESIGN	5,327,000	3,531,000	118,000	450,800	1,228,000
SUPV & ADMIN	2,568,000	1,630,000	30,000	268,000	640,000
FELSENTHAL LOCK-DAM	97,600,000	79,682,000	2,373,000	3,031,000	13,514,000
LANDS & DAMAGES	15,173,000	15,016,000	71,000	0	86,000
RESERVOIRS	919,000	875,000	0	0	44,000
DAMS	13,609,000	13,470,000	0	0	139,000
LOCKS	22,794,000	22,794,000	0	0	0

EFFECTIVE DATE
01 JAN 86

DIVN,LOWER MISSISSIPPI VALLEY REGION, LOWER MISSISSIPPI
DIST,VICKSBURG DISTRICT
BASIN, OUACHITA

PROJECT,OUACHITA-BLACK RVS

1-10-86

865

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APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, NAVIGATION PROJECTS LOCKS/DAM
RCS-CAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
ROADS,RR,BRIDGES	925,000	925,000	0	0	0
CHANNELS & CANALS	15,860,000	9,617,000	0	0	6,243,000
RECREATION FACILITY	11,658,000	2,834,000	1,384,000	1,789,000	5,651,000
CULTURAL RES PRESER	505,000	483,000	22,000	0	0
BLDGS,GRNDS,UTILS	997,000	798,000	26,000	0	173,000
PERM OPER EQUIP	1,087,000	893,000	25,000	0	169,000
ENGR & DESIGN	8,962,000	7,495,000	715,000	95,000	657,000
SUPV & ADMIN	5,111,000	4,482,000	130,000	147,000	352,000
CALION LOCK-DAM	76,700,000	53,880,000	4,084,000	2,808,000	15,928,000
RESERVOIRS	114,000	109,000	0	0	5,000
DAMS	10,860,000	10,422,000	266,000	0	172,000
LOCKS	21,177,000	21,172,000	0	0	5,000
ROADS,RR,BRIDGES	768,000	768,000	0	0	0
CHANNELS & CANALS	24,045,000	7,288,000	3,330,000	1,988,000	11,439,000
RECREATION FACILITY	2,571,000	891,000	23,000	0	1,657,000
CULTURAL RES PRESER	265,000	32,000	65,000	0	168,000
BLDGS,GRNDS,UTILS	972,000	781,000	0	179,000	12,000
PERM OPER EQUIP	1,106,000	860,000	25,000	0	221,000
ENGR & DESIGN	9,607,000	7,643,000	215,000	291,000	1,458,000
SUPV & ADMIN	5,215,000	3,914,000	160,000	350,000	791,000
FEDERAL FUNDS					
TOTAL COST - SCHED	272,000,000	205,177,000	6,744,000	9,920,000	50,159,000
UNDELIVERED ORDERS	0	1,391,000	912,000	-2,040,000	-263,000
TOTAL OBLIGATIONS	0	206,568,000	7,656,000	7,880,000	49,896,000

EFFECTIVE DATE
01 JAN 86

DIVN,LOWER MISSISSIPPI VALLEY REGION, LOWER MISSISSIPPI
DIST,VICKSBURG DISTRICT

BASIN, OUACHITA

PROJECT,OUACHITA-BLACK RVS

866

APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, NAVIGATION PROJECTS LOCKS/DAM
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FEDERAL FUNDS					
ALLOCATIONS		210,524,000	3,700,000 1/		
UNOB CARRYOVER FFY			3,956,000		
TOTAL AVAIL FOR OBL		0	7,656,000		
APPROPRIATION REQUIRED				7,880,000	49,896,000 2/
				FUTURE FEDERAL REQUIREMENTS	
				FISCAL YEAR 1988	7,190,000
				FISCAL YEAR 1989	3,100,000
				FISCAL YEAR 1990	3,000,000
				FISCAL YEAR 1991	3,000,000
				REMAINING BALANCE	33,606,000
NON-FEDERAL COSTS					
OTHER COSTS					
LANDS AND DAMAGES		5,231,000			
RELOCATIONS		4,192,000	190,000	108,000	
CHANNEL AND CANALS		727,000			
TOTAL NON-FEDERAL COSTS		10,150,000	190,000	108,000	

1/ REFLECTS $1,000,000 ASSIGNED AS SAVINGS & SLIPPAGE. INCLUDES $3.5M WITHHELD BY OCE PENDING DESIGN OF RECREATION FACILITIES.

2/ INCLUDES $15,808,000 FOR UNSCHEDULED WORK.

EFFECTIVE DATE 01 JAN 86

DIVN,LOWER MISSISSIPPI VALLEY REGION, LOWER MISSISSIPPI BASIN, OUACHITA
DIST,VICKSBURG DISTRICT

PROJECT,OUACHITA-BLACK RVS

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APPROPRIATION TITLE: Construction, General - Locks and Dams (Navigation)

PROJECT: Lock and Dam No. 26, Mississippi River, Alton, Illinois and Missouri (Continuing)

LOCATION: Lock and Dam No. 26 (Replacement) will be located in Madison County, Illinois and St. Charles County, Missouri at approximately Mile 200.8 above the mouth of the Ohio River in the vicinity of Alton, approximately two miles downstream from the existing Locks and Dam No. 26.

AUTHORIZATION: Internal Revenue Code of 1954 (Public Law 95-502) Title I - Replacement of Locks and Dam No. 26; Upper Mississippi River System Comprehensive Master Management Plan 21 October 1978 and Public Law 97-118.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 7.7 to 1 at 6 7/8 percent. The benefit to cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1974) was 1.6 to 1. The benefit to cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost
Estimated Federal Cost	$748,000,000	
Estimated Non-Federal Cost	3,660,000	
Cash Contribution $3,660,000		
Other 0		
Total Estimated Project Cost	$751,660,000	
Allocations to 30 September 1985	338,113,000 1/	
Conference Allowance for FY 1986	75,500,000	
Allocation for FY 1986	68,400,000 2/	
Allocations to Date	406,513,000	54
Allocation Requested for FY 1987	85,000,000	67
Scheduled Balance to Complete after FY 1987	252,827,000	
Unscheduled Balance to Complete after FY 1987	3,660,000	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	42	Apr 1991
Open to Navigation		Dec 1988

PHYSICAL DATA

Lock: One, 1,200 feet x 110 feet
Dam: Non-navigable 9 tainter gates
Overflow Dike: Earth embankment - 2,000 feet
Spur Dike: Earth Embankment - 2.4 miles
Relocations: Railroad ($22,982,000); Roads ($2,580,000); Utilities ($10,058,000)
Pumping Plant: 1 - 223 cubic feet per second
Lands and Damages: Acres - 3,986;
Type - Predominantly crop and brush and timberland and some commercial, recreation and industrial land fronting river.
Improvements - Industrial, commercial, and recreation buildings.

1/ Includes $1,320,000 to initiate design of Locks and Dam No. 26, Second Lock in FY 1985.
2/ Reflects $7,100,000 reduction assigned as Savings and Slippage.

Division: Lower Mississippi Valley District: St. Louis Region: Upper Mississippi
Lock and Dam No. 26, Mississippi River, Alton, Illinois and Missouri

4 FEB 1986

JUSTIFICATION: The poor physical condition of the existing Lock and Dam 26 and the inability of the locks to handle current and projected traffic without costly delays makes replacement imperative.

Both the dam and locks are set on piles, which are driven into the riverbed sands and are not supported by bedrock. The structure, which was placed in operation in 1938, has a history of excessive deflections, settlements, and loss of foundation material. Remedial measures have been made and are being continued to correct deficiencies but permanent repair is impractical because of engineering and cost considerations.

Approximately 58,000,000 tons passed through the locks in 1985. This traffic traversed the locks with an average delay to the tows of approximately 4 hours. This congestion causes costly delays for the tonnage passing through Locks 26, which has a value of approximately $13,000,000,000. Grains, chemicals, and energy commodities account for over 80 percent of this traffic. Based on the Master Plan Study (authorized by P.L. 95-502) a single 110 foot by 1,200 foot lock would have an estimated capacity of 94,000,000 to 100,000,000 tons per year. The 1,200 foot length will permit tows to lock as a single unit, thus eliminating the delays from double locking. Average annual benefits and designated redevelopment areas are as follows:

Benefits	Amount (1 October 1985)	Redevelopment Areas (PL 89-136)		
		County and State	Title	Subsection
Navigation	$ 144,115,000	Madison, Illinois	IV	8
Area Redevelopment	5,333,000	St. Clair, Illinois	IV	8
Recreation	469,000	Jefferson, Missouri	IV	8
		St. Charles, Missouri	IV	6
Total	$ 149,917,000	City of St. Louis, Missouri	IV	7 & 8

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FISCAL YEAR 1987: The requested amount of $85,000,000 will be applied as follows:

Initiate:	County Roads	$ 55,000
	Burlington Northern Alteration	530,000
	Clearing	40,000
	Spur Dike Item IV	115,000
Initiate & Complete:	Electric Tower Subordinations	5,000
	Spare Part - Bulkhead Crane	70,000
Continue:	Lands and Damages	1,000,000
	Missouri State Highway 67 and West Alton Road	100,000
	Arco Pipeline Relocation	600,000
	Alton Pump Station and Drainage Alterations	2,605,000
	Alton Pump Station Equipment	285,000
	Lock and Dam Second Stage	69,708,000
	Operation & Maintenance During Construction	87,000
Complete:	Land Acquisition (Relocation Hired Labor)	8,000
	Pipeline Subordinations	30,000
	Piasa Sewer Alteration	477,000
	Wood River Levee Protection	460,000
	Gravity Drains	435,000
	Water Supply Main	60,000
	Sewer Line	30,000
Engineering and Design		3,000,000
Supervision and Administration		5,300,000
Total		$ 85,000,000

The funds requested will allow meeting proposed schedule of work in an orderly sequence to meet present scheduled completion date.

NON-FEDERAL COST: Local interests are required by Public Law 89-72 to cost share, on a 50/50 basis, all costs for the development of the proposed recreational area on the Missouri bank. After completion of construction, the local interests would be responsible for operation and maintenance of the area. Non-Federal share of the construction cost is estimated to be $3,660,000.

STATUS OF LOCAL COOPERATION: By letter of 3 October 1985, the Missouri Inter-Agency Council For Outdoor Recreation withdrew the state's intent to participate in the recreation features of the project. The State had reviewed the proposed plan for recreation facilities and submitted an updated letter of intent on 15 December 1983 to cost-sharing on a 50-50 basis of the initial cost of the development and to operate and maintain the facilities following completion of construction. The State withdrew due to anticipated development costs, operation and maintenance costs, and the availability of private facilities presently serving Pool 26.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $748,000,000 is a decrease of $5,000,000 from the latest estimate ($753,000,000) submitted to Congress. This change includes increases of $292,000 for contract completions and actual costs and $8,275,000 in Engineering and Design and Supervision and Administration based on a reanalysis of requirements. These increases were offset by a decrease of $13,567,000 for adjustments in the estimated inflation allowance through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH THE CLEAN WATER ACT: A final Environmental Impact Statement was filed with the Council on Environmental Quality on 8 September 1976.

The provisions of Section 404 of the Clean Water Act were met by a Section 404(b)(1) Evaluation Report on 25 April 1979, a Public Notice issued 4 May 1979, Certification by the State of Illinois on 10 October 1979 and the State of Missouri on 12 July 1979, and the District Engineer's signature on the Evaluation Report on 17 October 1979. A revised Section 404(b)(1) Evaluation Report was signed by the District Engineer on 11 August 1981.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in Fiscal Year 1970 and for construction in Fiscal Year 1974. Subsequent to the annual update of costs and benefits changes have occurred which will be reflected in next year's updating process; however, there will be no significant change to the total estimated cost of this project.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Lower Mississippi Valley
District: St. Louis

Project: Lock and Dam No. 26, Mississippi River, Alton, Illinois and Missouri

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	419,000 (Oct 1976)		753,000 1/		748,000 1/ 3/
Reason for Change		(334,000) 1/		(- 5,000) 3/	
a. Price Escalation		373,990		- 13,567	
b. Design Changes		46,296		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimating Adjustments		- 91,976 2/		8,567 4/	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		5,690		0	

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes increases of $31,658 for Engineering and Design and Supervision and Administration based on a reanalysis of requirements; $411 for additional design studies; $8,100 for costs inadvertently deleted; $170 for maintenance during construction; $9,041 for additional scour monitoring, differing site conditions, additional grouting, and additional sheet pile on the First Stage Dam; and $4,198 for costs due to flooding and flood damage repairs; offset by a net decrease of $-145,554 due to changes in quantities, contract award, and actual cost.
3/ Includes decrease of $13,567 for adjustments in the estimated inflation allowance through the construction period.
4/ Includes increases of $292 for contract completions and actual cost and $8,275 in Engineering and Design and Supervision and Administration based on a reanalysis of requirements.

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APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, LOCKS DAMS & CANALS NAVIGATION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
LANDS AND DAMAGES	17,000,000	3,738,000	584,000	1,000,000	12,658,000
RELOCATIONS	35,600,000	449,000	4,645,000	4,695,000	25,811,000
RESERVOIRS	1,770,000	34,000	0	40,000	1,696,000
DAMS	309,000,000	213,012,000	6,437,000	8,070,000	81,481,000
LOCKS	251,640,000	51,493,000	50,426,000	61,700,000	88,021,000
ROADS RAILROADS & BR	1,780,000	0	0	0	1,780,000
CHANNELS AND CANALS	20,000,000	6,926,000	10,000	460,000	12,604,000
LEVEES AND FLOODWALL	5,690,000	4,237,000	300,000	550,000	603,000
RECREATION FACIL	6,060,000	0	0	0	6,060,000
BUILD GROUNDS & UTIL	6,950,000	2,004,000	52,000	115,000	4,779,000
PERM OPERATING EQUIP	1,070,000	91,000	3,000	70,000	906,000
ENGINEERING & DESIGN	55,800,000	38,053,000	3,300,000	3,000,000	9,447,000
SUPERVISION & ADMIN	32,400,000	18,584,000	4,215,000	5,300,000	8,301,000
FED AND NON-FED					
TOTAL COST - SCHED	751,660,000	336,621,000	69,892,000	85,000,000	260,147,000
UNDELIVERED ORDERS	0	664,000	-664,000	0	0
TOTAL OBLIGATIONS	0	337,285,000	69,228,000	85,000,000	260,147,000
FEDERAL FUNDS					
TOTAL COST - SCHED	748,000,000	336,621,000	69,892,000	85,000,000	256,487,000
UNDELIVERED ORDERS	0	664,000	-664,000	0	0
TOTAL OBLIGATIONS	0	337,285,000	69,228,000	85,000,000	256,487,000
NON-FEDERAL FUNDS					
TOTAL COST - SCHED	3,660,000	0	0	0	3,660,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	0	0	3,660,000

878

EFFECTIVE DATE 01 JAN 86

DIVN,LOWER MISSISSIPPI
DIST,ST. LOUIS DISTRICT

VALL REGION, UPPER MISSISSIPPI
BASIN, MISS KASKASKIA ST L

PROJECT,LOCK & DAM 26 REPLAC
IL-MO

4 FEB 86

873

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APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, LOCKS DAMS & CANALS NAVIGATION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FED AND NON-FED					
ALLOCATIONS		338,113,000 1/	68,400,000 2/		
UNOB CARRYOVER PFY			828,000		
TOTAL AVAIL FOR OBL		0	69,228,000		
APPROPRIATION REQUIRED				85,000,000	260,147,000
FEDERAL FUNDS					
ALLOCATIONS		338,113,000	68,400,000		
UNOB CARRYOVER PFY			828,000		
TOTAL AVAIL FOR OBL		0	69,228,000		
APPROPRIATION REQUIRED				85,000,000	256,487,000
FUTURE FEDERAL REQUIREMENTS					
FISCAL YEAR 1988					79,000,000
FISCAL YEAR 1989					67,000,000
FISCAL YEAR 1990					21,000,000
FISCAL YEAR 1991					85,827,000
REMAINING BALANCE					3,660,000 3/
NON-FEDERAL FUNDS					
CONTRIBUTIONS		0	0		
UNOB CARRYOVER PFY					
TOTAL AVAIL FOR OBL		0	0		
CONTRIBUTION REQUIRED				0	3,660,000
FUTURE NON-FED REQUIREMENTS					
FISCAL YEAR 1988					0
FISCAL YEAR 1989					0
FISCAL YEAR 1990					0
FISCAL YEAR 1991					0
REMAINING BALANCE					3,660,000

1/ Includes $1,320,000 to initiate desig of Locks and Dam No. 26, Second Lock in FY 1985.
2/ Reflects $7,100,000 reduction assigned as Savings and Slippage.
3/ Includes $3,660,000 unscheduled work.

EFFECTIVE DATE 31 JAN 86 — DIVN,LOWER MISSISSIPPI DIST,ST. LOUIS DISTRICT — VAIL REGION, UPPER MISSISSIPPI BASIN, MISS RASKASKIA & IL — PROJECT,LOCK & DAM 26 REPLAC IL-MO

874

874

APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, LOCKS DAMS & CANALS NAVIGATION
RCS-DAMS-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS	3,660	0			
OTHER COSTS					3,660
LANDS & DAMAGES	0				
RELOCATIONS	0				
OTHER	0				
TOTAL NON-FEDERAL COSTS	3,660				3,660
TOTAL PROJECT COSTS FEDERAL (CORPS) COSTS AND NON-FEDERAL COST	751,660	338,113	68,400	85,000	260,147

875

EFFECTIVE DATE
01 JAN 86

DIVN, LOWER MISSISSIPPI
DIST, ST. LOUIS DISTRICT

VALL REGION, UPPER MISSISSIPPI
BASIN, MISS KASKASKIA ST. L

PROJECT, LOCK & DAM 26 REPLAC
IL-MO

4 SEP 1985

875

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APPROPRIATION TITLE: Construction, General - Locks and Dams (Navigation)

PROJECT: Locks and Dam No. 26, Illinois and Missouri, Second Lock (Continuing)

LOCATION: Locks and Dam No. 26, Second Lock, will be located adjacent to the Lock and Dam 26 (Replacement) in the Mississippi River at Madison County, Illinois and St. Charles County, Missouri, river mile 200.8 above the mouth of the Ohio River in the vicinity of Alton, Illinois, approximately 2 miles downstream from the existing Locks and Dam No. 26.

AUTHORIZATION: Supplemental Appropriation Act, FY 1985 (Public Law 99-88).

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 8.6 to 1 at 8 1/8 percent. The benefit to cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 8.0 to 1. The benefit to cost ratio analysis is incremental to the Lock and Dam No. 26, Mississippi River, Alton, Illinois and Missouri Project.

SUMMARIZED FINANCIAL DATA		
Estimated Federal Cost		$280,000,000
General Appropriations	$140,000,000	
Inland Waterway Trust Fund	140,000,000	
Estimated Non-Federal Cost		0
Total Estimated Project Cost		$280,000,000 1/

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	0	Apr 1991
Open to Navigation		Apr 1991

PHYSICAL DATA: Lock: One, 600 feet x 110 feet

	General Appropriation	Inland Waterway Trust Fund	Accum. % of Est. Fed. Cost
Allocations to 30 September 1985	$ 115,000	$ 0	
Conference Allowance For FY 1986	0	0	
Potential Allocation For FY 1986	1,885,000	2,000,000	
Potential Allocations To Date	2,000,000	2,000,000	1
Allocation Requested For FY 1987	2,000,000 2/	2,000,000 2/	3
Scheduled Balance to Complete After FY 1987	136,000,000	136,000,000	
Unscheduled Balance to Complete After FY 1987	0	0	

Division: Lower Mississippi Valley District: St. Louis Region: Upper Mississippi

4 FEB 1986 876

1/ Includes $1,320,000 funded from Lock and Dam No. 26, Mississippi River, Alton, Illinois and Missouri project to initiate design on this project in FY 1985.

2/ Obligation and Expenditure of the budgeted funds for construction of this project are contingent upon enactment of legislation increasing the amount of revenue derived from taxes imposed on fuels used by vessels engaged in commercial waterway transportation, in accordance with the agreement between the Administration and the Senate Majority Leadership.

JUSTIFICATION: Locks and Dam No. 26 are strategic to the movement of commodities up and down the Mississippi and Illinois Rivers. Any disruption of the single-lock operation will bring shipping to a halt. The second lock will be capable of keeping traffic moving and minimizing delays that could result during routine maintenance or as a result of unexpected emergencies that could occur in the main lock. In addition, the second lock will increase the capacity to pass traffic on the rivers. The average annual benefits, all navigation, are $182,000,000 based on 1 October 1985 prices. There are no redevelopment areas within commuting distance of this project.

FISCAL YEAR 1987: The requested amount of $4,000,000 will be applied as follows:

Engineering and Design	$3,700,000
Supervision and Administration	300,000
TOTAL	$4,000,000

The funds requested will be used to continue engineering and design and complete an Environmental Impact Statement and are necessary to meet the scheduled completion date.

NON-FEDERAL COST: In accordance with the agreement between the Administration and the Senate Majority leadership, 50 percent of the total costs of construction will be derived from the Inland Waterway Trust Fund.

STATUS OF LOCAL COOPERATION: None required.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $280,000,000 is an increase of $60,000,000 from the latest estimate ($220,000,000) (October 1983) submitted to Congress (FY 1985). This change reflects an increase of $60,000,000 for an estimated inflation allowance from 1 October 1985 through the construction period.

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STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH THE CLEAN WATER ACT: A draft Environmental Impact Statement is scheduled to be completed in the third quarter FY 1986. A final Environmental Impact Statement will be prepared and filed with the Environmental Protection Agency in the second quarter FY 1987.

The provisions of Section 404 of the Clean Water Act will be met by a Section 404(b)(1) Evaluation in the third quarter FY 1986, a Public Notice issued in the second quarter FY 1987, a Certification from the State of Missouri and Illinois in the third quarter FY 1987, and the District Commander's signature on the Statement of Findings in the third quarter FY 1987.

OTHER INFORMATION: Funds to initiate construction were appropriated in Fiscal Year 1985. Subsequent to the annual update of costs and benefits; changes have occurred that will potentially reduce the total estimated project costs by approximately $18,700,000. These changes will be reflected in next years updating process.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Lower Mississippi Valley
District: St. Louis

Project: Locks and Dam No. 26, Illinois-and-Missouri, Second Lock

Item	Original Baseline (1)	Estimates Presented to Congress ($1,000) Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	$220,000 (Oct 83)		$220,000 (Oct 83)		$280,000 1/
Reason for Change				(60,000) 1/	
a. Price Escalation		0		60,000	
b. Design Changes		0		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimating Adjustments		0		0	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		0	

1/ Includes $60,000 allowance for estimated inflation from 1 October 1985 through the construction period.

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APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, LOCKS DAMS & CANALS NAVIGATION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
LOCKS	$251,100,000	$ 0	$ 0	$ 0	$251,100,000
ENGINEERING & DESIGN	13,500,000	0	3,700,000	3,700,000	6,100,000
SUPERVISION & ADMIN	15,400,000	0	300,000	300,000	14,800,000
FEDERAL FUNDS					
TOTAL COST - SCHEDULE	280,000,000 1/	0	4,000,000	4,000,000	272,000,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	4,000,000	4,000,000	272,000,000
FEDERAL FUNDS					
GENERAL APPROPRIATION					
TOTAL COST - SCHEDULE	140,000,000	0	2,000,000	2,000,000	136,000,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	2,000,000	2,000,000	136,000,000
INLAND WATERWAY TRUST FUND					
TOTAL COST - SCHEDULE	140,000,000	0	2,000,000	2,000,000	136,000,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	2,000,000	2,000,000	136,000,000

1/ Includes $1,320,000 funded from Lock and Dam No. 26, Mississippi River, Alton, Illinois and Missouri, project to initiate design on this project in FY 1985.

EFFECTIVE DATE 01 JAN 86

DIVN, LOWER MISSISSIPPI VALL REGION, UPPER MISSISSIPPI DIST, ST. LOUIS DISTRICT

PROJECT, L&D 26, IL & MO, SECOND LOCK
BASIN, MISS, KASKASKIA, ST. L

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APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, LOCKS DAMS & CANALS NAVIGATION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FEDERAL FUNDS					
ALLOCATIONS		115,000	3,885,000		
UNOB CARRYOVER PFY			115,000		
TOTAL AVAIL FOR OBL		0	4,000,000		
APPROPRIATION REQUIRED				4,000,000	272,000,000
FEDERAL FUNDS					
GENERAL APPROPRIATION					
ALLOCATIONS		115,000	1,885,000		
UNOB CARRYOVER PFY		0	115,000		
TOTAL AVAIL FOR OBL		0	2,000,000		
APPROPRIATION REQUIRED				2,000,000 2/	136,000,000
INLAND WATERWAY TRUST FUND					
ALLOCATIONS		0	2,000,000		
UNOB CARRYOVER PFY					
TOTAL AVAIL FOR OBL		0	2,000,000		
APPROPRIATION REQUIRED				2,000,000	136,000,000

2/ Obligation and Expenditure of the budgeted funds for construction of this project are contingent upon enactment of legislation increasing the amount of revenue derived from taxes imposed on fuels used by vessels engaged in commercial waterway transportation, in accordance with the agreement between the Administration and the Senate Majority Leadership.

FUTURE FEDERAL REQUIREMENTS	
FISCAL YEAR 1988	20,000,000
FISCAL YEAR 1989	86,000,000
FISCAL YEAR 1990	88,000,000
FISCAL YEAR 1991	78,000,000
REMAINING BALANCE	0

EFFECTIVE DATE
01 JAN 86

DIVN, LOWER MISSISSIPPI VALL REGION, UPPER MISSISSIPPI DIST, ST. LOUIS DISTRICT

PROJECT, L&D 26, IL & MO, SECOND LOCK BASIN, MISS, KASKASKIA ST. L

4 FEB 1986

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APPROPRIATION TITLE: Construction General - Channels and Harbors (Navigation)

PROJECT: Mississippi River, Baton Rouge to the Gulf of Mexico, Louisiana (Continuing)

LOCATION: The project is located at the mouth of the Mississippi River below Venice, LA, in South and Southwest Passes. The entire project, as authorized, is located on the lower reaches of the Mississippi River between Baton Rouge, LA, and the Gulf of Mexico.

AUTHORIZATION: River and Harbor Act of 1945.

BENEFIT TO COST RATIO: The remaining benefit - remaining cost ratio is 27.0 to 1 at 2 5/8 percent. Congress appropriated initial construction funds FY 1959. The benefit to cost ratio initially computed in FY 1961 was 19.3 to 1. The benefit to cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. (COE) Cost
Estimated Federal Cost (Corps of Engineers)	$357,000,000	
Estimated Federal Cost (US Coast Guard)	29,000	
Estimated Non-Federal Cost	1,900,000	
Cash Contribution 0		
Other $1,900,000		
Total Estimated Project Cost	$358,929,000	
Allocations to 30 September 1985	20,080,000	
Conference Allowance for FY 1986	10,800,000	
Allocation for FY 1986	10,800,000	
Allocations to Date	30,880,000	9
Allocation Requested for FY 1987	19,400,000	14
Scheduled Balance to Complete after FY 1987	17,481,000	
Unscheduled Balance to Complete after FY 1987	289,239,000	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	50	Indefinite 1/

1/ Completion of project is indefinite pending a decision to construct the remaining items.

Division: Lower Mississippi Valley District: New Orleans Region: Lower Mississippi

Mississippi River, Baton Rouge to the Gulf of Mexico, LA

4 FEB 1986

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PHYSICAL DATA

Channels and Canals:
Southwest Pass: 40 feet deep (Mean Low Gulf) by 800 feet wide, 19.1 miles.
Southwest Pass Bar Channel: 40 feet deep (Mean Low Gulf) by 600 feet wide from mile 18.0 below Head of Passes to the -40 feet (Mean Low Gulf) contour in the Gulf of Mexico.

Breakwaters and Seawalls:
Control and contraction structures in Southwest Pass to restrict channel cross section to approximately 1,420-foot surface width.

Venice to Head of Passes: Foreshore Dikes and Bank Nourishment - 17.1 miles
Southwest Pass: Foreshore Dikes and Bank Nourishment - 38.4 miles

Bank Stabilization:
Southwest Pass: Wood Pile Dikes - 5.3 miles
Bulkheads - 4.8 miles
Jetty Head - 8,200 tons
Jetty Stabilization - 697,000 tons

JUSTIFICATION: The trend of modern shipping is toward larger, deeper draft vessels. Channel depths, greatly in excess of 40 feet, exist from a short distance above Head of Passes to New Orleans. The 40-foot channel permits ships to load to deeper drafts, thus utilizing more cargo space, and eliminates the hazards of groundings and restricted maneuvering space to deep draft vessels navigating Southwest Pass caused by fluctuating depths in the passes.

Maintaining the project channels in Southwest Pass is of national importance. The major shoaling problems occurring below Venice, LA, have seriously impaired the operation of the ports of New Orleans and Baton Rouge, as well as industries along the Mississippi River, all of which are of vital importance to the economy of the region and nation. The remaining work is required to minimize shoaling problems below Venice, LA, and will ultimately stabilize and provide a more easily controlled channel. At present, the project depth of 40 feet is maintained, on the average, about 70 percent of the time. This translates to losses of about $100,000,000 in average annual navigation benefits when compared to maintaining the project depth 90 percent of the time with the proposed project in place. Maintenance dredging will increase without construction of the recommended project.

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The average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Navigation	$1,686,623,000
Recreation	630,000
Total Annual Benefits	$1,687,253,000

FISCAL YEAR 1987: The requested amount of $19,400,000 will be applied as follows:

Initiate:	
Bank Nourishment Mile 2.3R-4.7R Below Head of Pass	$ 240,000
Foreshore Dike Mile 0.8R-2.3R Below Head of Pass	2,154,000
Initiate and Complete:	
Bank Nourishment Mile 0.6L-4.6L Below Head of Pass	1,210,000
Bank Nourishment Mile 4.0R-3.0R Above Head of Pass	913,000
Foreshore Dike Mile 4.6L-7.2L Below Head of Pass	5,370,000
Complete:	
Bank Nourishment Mile 3.0R-0.5R Above Head of Pass	730,000
Foreshore Dike Mile 0.6L-4.6L Below Head of Pass	1,341,000
Foreshore Dike Mile 4.0R-3.0R Above Head of Pass	1,535,000
Foreshore Dike Mile 2.3R-4.7R Below Head of Pass	3,576,000
Surveys and Layouts	15,000
Engineering and Design	1,123,000
Supervision and Administration	1,193,000
Total	$19,400,000

The funds requested will allow for continuation of the training works features.

NON-FEDERAL COST: The non-Federal cost estimate of $1,900,000 is required for the relocation of several sections of pipelines located adjacent and parallel to Southwest Pass. Also, local interests have the maintenance responsibility of providing required channel depths for 100 feet adjacent to wharves and structures for which costs are not known.

STATUS OF LOCAL COOPERATION: Pipeline relocations will be accomplished by facility owners as required by existing Corps of Engineers permits.

COMPARISON OF FEDERAL (CORPS OF ENGINEERS) COST ESTIMATE: The current Federal cost estimate of $357,000,000 is an increase of $9,000,000 over the latest estimate ($348,000,000) submitted to Congress. This change includes increases of $12,007,000 for adjustments in the estimated inflation allowance through the construction period and $209,000 based on more detailed planning of construction. These increases were partially offset by decreases of $2,236,000 based on favorable bid experience and $980,000 due to favorable bids received.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 19 July 1974 and a final Environmental Impact Statement Supplement I was filed on 19 March 1976. A final Environmental Impact Statement Supplement II describing modifications resulting from the completed studies on the training works in the Mississippi River and Southwest Pass was filed with the Environmental Protection Agency on 22 February 1985. The record of decision was signed on 15 May 1985.

The provisions of Section 404 of the Clean Water Act have been met by the District Engineer's signature on the Section 404(b)(1) Evaluation Report on 13 September 1984, a Public Notice issued on 14 June 1984, and a certification from the State of Louisiana issued on 9 August 1984.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1946 and for construction in FY 1959. Funds to resume construction were appropriated in FY 1978.

During the 22-year period, 1951 to 1972, inclusive, the annual high water discharges of the Mississippi River have been insufficient to nourish the banks of the Mississippi River below Venice, LA. The rate of subsidence of the delta land mass, estimated to be approximately 1 foot per decade, along with natural erosion, has left the river banks void of elements vital to its natural nourishment process. With the 1973 flood and high waters of 1974 and 1975, much of the discharge was lost over the banks and through naturally created outlets. As a result, the sediments were lost into the back bays and the natural process of restoring the banks did not occur. The widened river resulted in a decrease in the river velocity which in turn caused an increase in shoaling. The best way to rebuild the banks appears to be construction of stone retention dikes to retain and protect hydraulic fill bank nourishment. The project cost estimate presented herein represents an increase in scope of the project features based on more detailed design studies which have recently been completed. Completion of the project is indefinite pending a decision to construct the remaining items.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Lower Mississippi Valley
District: New Orleans

Project: Mississippi River, Baton Rouge to the Gulf of Mexico, Louisiana

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost	34,000		348,000 2/		357,000 2/ 3/
(Price Level)	(July 1957)				
Reason for Change		(314,000) 2/		(+ 9,000) 3/	
a. Price Escalation		61,388		12,007	
b. Design Changes		215,628		209 4/	
c. Additional Function Added Under General Authorization		-25,200		0	
d. Authorized Modification		61,310		0	
e. Post-Contract Award and Other Estimating Adjustments		874 1/		-3,216 5/	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		0	

1/ Increase based on contract award.
2/ Includes an allowance for estimated inflation projected through the construction period.
3/ Includes an increase of $12,007 for adjustments in the estimated inflation allowance through the construction period.
4/ Based on more detailed planning of construction.
5/ Includes decreases of $2,236 based on favorable bid experience and $980 due to favorable bids received.

APPROPRIATION TITLE
CONSTRUCTION, GENERAL

CLASSIFICATION, NAVIGATION
RCS-DAEN-CUB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
CHANNELS & CANALS	4,872,000	4,872,000	0	0	0
BREAKWATERS&SEAWALLS	88,600,000	4,191,000	0	0	84,409,000
Bank STABILIZATION	223,258,000	688,000	12,200,000	17,884,000	193,284,000
ENGR & DESIGN	17,275,000	6,670,000	819,000	1,123,000	8,661,000
SUPERVISION & ADMIN	22,995,000	964,000	472,000	1,193,000	20,366,000
FEDERAL FUNDS					
TOTAL COST - SCHED	357,000,000	17,190,000	13,631,000	19,400,000	306,779,000
UNDELIVERED ORDERS	0	2,782,000	-2,782,000	0	0
TOTAL OBLIGATIONS	0	19,981,000	10,890,000	19,400,000	306,779,000

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EFFECTIVE DATE 01 JAN 86

DIVN,LOWER MISSI86IPPI DIST,NEW ORLEANS DISTRICT

WALL REGION, LOWER MISSI86IPPI BASIN, COASTAL LOUISIANA

PROJECT,MISS.RV, BATON ROUGE TO GULF

4 FEB 1986

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APPROPRIATION TITLE
CONSTRUCTION,GENERAL

CLASSIFICATION, NAVIGATION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (FS-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1986	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FEDERAL FUNDS					
ALLOCATIONS		20,600,000	10,000,000		
LMOB CARRYOVER PFY			30,000		
TOTAL AVAIL FOR OBL		0	10,000,000		
APPROPRIATION REQUIRED				19,400,000	360,720,000
				FUTURE FEDERAL REQUIREMENTS	
				FISCAL YEAR 1988	9,000,000
				FISCAL YEAR 1989	710,000
				FISCAL YEAR 1990	750,000
				FISCAL YEAR 1991	750,000
				REMAINING BALANCE	295,470,000(1)
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS	N/A				
OTHER COSTS					
LANDS & DAMAGES	N/A				
RELOCATIONS	1,900,000	0	0	1,900,000	1,900,000
TOTAL NON-FED COST	1,900,000	0	0	1,900,000	1,900,000
TOTAL FED(CORPS) & N/F	358,900,000	20,600,000	10,300,000	19,400,000	360,620,000

(1) INCLUDES 8000,230.0 UNSCHEDULED WORK.

EFFECTIVE DATE 01 JAN 86

DIVN,LOWER MISSISSIPPI VALL REGION, LOWER MISSISSIPPI DIST,NEW ORLEANS DISTRICT BASIN, COASTAL LOUISIANA

PROJECT,MISS.RV. BATON ROUGE TO GULF

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4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Mississippi River-Gulf Outlet, Louisiana (Continuing)

LOCATION: The project is located in the southeastern portion of Louisiana, east of the Mississippi River. It is essentially a deep draft seaway canal extending for approximately 76 miles in a southeasterly direction from the city of New Orleans to the Gulf of Mexico.

AUTHORIZATION: PL 455, 84th Congress, 2d Session, approved 29 March 1956 and Water Resources Development Act of 1976.

BENEFIT-TO-COST RATIO: The remaining benefit - remaining cost ratio is 2.2 to 1 at 2 5/8 percent. Congress appropriated initial construction funds in FY 1958. The benefit-to-cost ratio initially computed in FY 1961 was 1.6 to 1.

SUMMARIZED FINANCIAL DATA

			Accum. % of Est Fed (COE) Cost
Estimated Federal Cost (Corps of Engineers)		$491,000,000 1/	
Estimated Federal Cost (US Coast Guard)		45,000	
Estimated Non-Federal Cost		259,800,000 1/	
Cash Contribution	0		
Other	$259,800,000 1/		
Total Estimated Project Cost		$750,845,000 1/	
Allocations to 30 September 1985		81,340,000	
Conference Allowance for FY 1986		7,200,000	
Allocation for FY 1986		6,200,000 2/	
Allocations to Date		87,540,000	18
Allocation Requested for FY 1987		2,000,000	18
Scheduled Balance to Complete after FY 1987		10,450,000	
Unscheduled Balance to Complete after FY 1987		391,010,000	

STATUS: (1 January 1986)

	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	75	Indefinite
MRGO Unit	85	Indefinite 3/
Shiplock Unit	0	Indefinite 4/

Open to Navigation	
MRGO Unit	1968
Shiplock Unit	Indefinite

1/ See Other Information paragraph regarding cost sharing.
2/ Reflects $1,000,000 reduction assigned as savings and slippage.
3/ Completion of foreshore protection is postponed indefinitely until need arises.
4/ Completion of the ship lock element is indefinite pending a decision to initiate construction.

Division: Lower Mississippi Valley District: New Orleans Region: Lower Mississippi

4 FEB 1986

Mississippi River-Gulf Outlet, LA

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PHYSICAL DATA

Channels:
- Channel, 36 feet deep by 500 feet wide from Inner Harbor Navigation Canal to Chandeleur Islands; 66 miles
- Channel, 36 feet deep by 500 feet wide from Mississippi River to the Gulf Outlet
- Eased Entrance Channel widens gradually from 500 feet at Chandeleur Islands to 600 feet at the 38 foot contour in the Gulf of Mexico; 9.38 miles
- Turning Basin, vicinity of Inner Harbor Navigation Canal

Locks:
- New Lock, 110 feet wide by 40 feet deep by 1,200 feet long

Levees and Floodwalls: Foreshore Protection - 23.0 miles
- Levees - 6.0 miles

Relocations:

Roads (Completed)	$ 328,000
High Level Bridge, Louisiana Highway No. 47 (Paris Road Bridge)(Completed)	$12,260,000
Semi-High Level Bridge, St. Claude Avenue	$63,300,000
Semi-High Level Bridge, Claiborne Avenue	$72,500,000
Florida Avenue Vehicular and Railroad Bridge and Detour Route	$110,700,000

Dikes in Breton Sound:
- Northeast Retention Dike to Mile 20.2
- Southwest Retention Dike to Mile 14.8

JUSTIFICATION: New Orleans is the gateway to the great system of inland waterways of the central valley of the nation. Adequate outlets to the Gulf of Mexico are essential to provide economical transportation to this area. The project provides an additional outlet to the Gulf that is shorter than the river route and one which is not subject to as large stage fluctuations as is the river. The improvement provides a tidewater outlet and harbor sufficiently spacious for dispersion of docks and cargo-handling facilities, thus permitting flexible operation of the inland and seagoing commerce which is utilizing the river, the tidewater canal, and the Gulf Intracoastal Waterway. The project provides savings in sailing time and ship turnaround time, reduction in navigation hazards, and relief from congestion.

The existing Inner Harbor Navigation Canal Lock passes barge traffic between the Mississippi River and the Gulf Intracoastal Waterway at New Orleans and is a vital link in the Gulf Intracostal Waterway system. The lock also is the connecting link for ship traffic between the Mississippi River-Gulf Outlet and the Mississippi River at New Orleans. The Port of New Orleans "Centroport" concept envisions that about half of the port's facilities will be constructed and operating along the Mississippi River-Gulf Outlet by the year 2000. This location is desirable because of the land available for the container and roll on-roll off operations and the close proximity of available intermodal transportation facilities. The existing lock was completed in 1923 by non-Federal interests and has been leased by the Federal Government since 1944. It has a maximum practical capacity for barge traffic of approximately 30,000,000 tons. The number of ships locked from 1970 through 1984 averaged about 219 per year. This is a reduction in ship lockages since 1961, which is due in part to the development of the Mississippi River-Gulf Outlet channel and also the inadequacy of the Inner Harbor Navigation Canal Lock for ship traffic. Studies indicate that, with a new lock, barge traffic would generally be expected to increase to about 45,000,000 tons by 2035 and that the number of ship lockages by 2035 would be approximately 1,800. The new facility would provide navigation benefits of about $70,900,000 annually.

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The average annual benefits and designated redevelopment areas are as follows:

Benefits	Amount (1 October 1985)
Navigation	$103,700,000
Vehicular	23,400,000
Advance Replacement of Bridges	3,500,000
Savings to Existing Project	1,900,000
Total Annual Benefits	$132,500,000

Redevelopment Areas (PL 89-136)		
Parish and State	Title	Subsect on
Jefferson, LA	IV	(8)
Orleans, LA	IV	(8)
St. Bernard, LA	IV	(8)

FISCAL YEAR 1987: The requested amount of $2,000,000 will be applied as follows:

Continue:	
Engineering and Design	$1,450,000
Supervision and Administration	550,000
TOTAL	$2,000,000

The funds requested will allow for completion of the Evaluation Report and initiation of general design studies for the new ship lock feature.

NON-FEDERAL COST: 1/ Local interests are required to provide all lands, easements, rights-of-way, including relocations and disposal areas, except that the conditions of local cooperation are modified with respect to the construction of bridges required as a result of construction of the Mississippi River-Gulf Outlet new shiplock. The 1976 Water Resources Development Act authorized the Federal Government to pay for the cost of the bridges up to $71,500,000. Estimated non-Federal costs are broken down as follows:

Land and Damages	$ 49,407,000
Relocations (Utilities)	34,572,000
Disposal Areas	821,000
Relocations (Bridges)	175,000,000
TOTAL	$ 259,800,000

1/ See Other Information paragraph regarding cost sharing.

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In addition, local interests are required to construct, maintain, and operate terminal facilities commensurate with requirements of the expanded port. Local interests are also required to operate and maintain the highway bridges built by the Government and provide for, or modify and maintain, all necessary utility relocations that may be required at an estimated annual maintenance cost of $65,000.

In keeping the port facilities abreast of development, the port authority constructed and opened to use in 1923 a lock and the Inner Harbor Navigation Canal, providing 6-1/2 miles of additional 30-foot draft dockage space at a cost of $25,000,000. Since 1944, the Port Commission has spent an additional $220,268,000 in modernizing the public terminal facilities of the port, including most recently the France Road and Jordan Road Terminals.

In addition to the above costs, an estimated $131,000,000 will be expended by the Board of Commissioners of the Port of New Orleans concurrently with or subsequent to project construction to provide for public terminal facilities in the project area as follows:

Item of Work	Amount
Public Bulk Terminal Development	$ 31,300,000
Public Bulk Terminal Expansion	17,400,000
New Lock - Local Agency Costs	62,900,000
Mississippi River-Gulf Outlet - Area Development	19,400,000
	$131,000,000

STATUS OF LOCAL COOPERATION: Assurances of local cooperation furnished by the Board of Commissioners of the Port of New Orleans were accepted on behalf of the United States on 29 August 1957. The Board of Commissioners executed amended assurances covering the provisions of the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, which were accepted on behalf of the United States on 21 April 1975. Supplemental assurances reflecting the changes made necessary by enactment of the Water Resources Development Act of 1976 were requested on 11 September 1978. By letter of 18 September 1978, local interests stated that they could not respond to our requests due to plans for the lock at the Inner Harbor Navigation Canal site being in a very preliminary stage. A meeting was held in November 1983, with the Board of Commissioners to inform them of the selected plan and its costs, including their share, which was based on traditional cost sharing. By letter of 17 February 1984, the Board stated that they could not support the plan at that time because of the uncertainty of cost sharing and the financial situation of the State of Louisiana. However, by letter dated 11 February 1985, the Governor of Louisiana provided the necessary assurances to proceed with the coordination of an appropriate course of action for public involvement and to process the Evaluation Report. The public involvement program will be initiated in early 1986. See Other Information paragraph regarding cost sharing.

COMPARISON OF FEDERAL (CORPS OF ENGINEERS) COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $491,000,000 is an increase of $2,000,000 from last presented to Congress ($489,000,000). This change includes a price level increase of $8,451,000 and an increase of $2,000,000 to reflect a redesign and reanalysis of the proposed

new shiplock feature. These increases will partially offset decreases of $2,000,000 for the elimination of the estimated inflation allowance thru the end of the construction period; $6,435,000 based on favorable bids; and $16,000 for the actual cost of completed work. See Other Information paragraph regarding cost sharing.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 21 May 1976. A draft Environmental Impact Statement for the new ship lock is scheduled for submission to the Environmental Protection Agency in the fourth quarter of FY 1986, and the final statement is scheduled for submission in the third quarter of FY 1987.

The provisions of Section 404 of the Clean Water Act will be met by a Section 404(b)(1) Evaluation in the fourth quarter of FY 1986, the District Engineer's signature on the report by the fourth quarter of FY 1986, a public notice issued in the fourth quarter of FY 1986, and a certification from the State of Louisiana in the first quarter of FY 1987.

The lands along the Inner Harbor Navigation Canal are residential and commercial areas and no natural areas (lands not modified by man) exist. Minimal or no wetlands would be involved with the Inner Harbor Navigation Canal site. Dislocation and/or disruption to residents and marine facilities is possible. Impacts on water quality are being assessed in the Evaluation Report.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1957 and for construction in FY 1958.

This project will be cost shared consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership. However, an apportionment of cost is being deferred pending resolution of cost sharing policy and other legal issues.

President Carter, as a result of the review of water resource projects in April 1977, recommended that the site for the proposed ship lock be changed from the recommended lower site in St. Bernard Parish to the Inner Harbor Navigation Canal in Orleans Parish and that further study be conducted to determine whether repair or replacement is needed of the existing lock at the existing site. It was further recommended that, if replacement and expansion are deemed necessary, special care should be taken to minimize dislocation and disruption of residents near the site. These recommendations are being addressed in an Evaluation Report scheduled for completion in May 1987.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Lower Mississippi Valley
District: New Orleans

Project: Mississippi River-Gulf Outlet, LA

Item	Original Baseline (1)	Estimates Presented to Congress ($1,000) Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	92,000 (July 1956)		489,000 1/		489,000 3/
Reason for Change		(397,000) 1/		(2,000) 3/	
a. Price Escalation		309,919		6,451	
b. Design Changes		43,870		2,000 4/	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		128,059		0	
e. Post-Contract Award and Other Estimating Adjustments		-84,398 2/		-6,451 5/	
f. Schedule Changes		0		0	
g. Sundry		-450		0	
h. Real Estate		0		0	

1/ Includes an allowance of $2,000 for estimated inflation through the construction period for the MRGO element only.
2/ Decreases due to more detailed planning of construction; removal of dikes thru the Chandeleur Barrier Islands; removal of the dikes across Breton Sound beyond 6-foot contour, to be built if and when justified; and a reevaluation of Engineering and Design and Supervision and Administration requirements partially offset by increase based on actual costs of completed work.
3/ Excludes an allowance of $2,000 for estimated inflation through the construction period.
4/ Increase due to the redesign and reanalysis of the proposed new shiplock feature.
5/ Includes a decrease of $16 for completed work, and a decrease of $6,435 savings from favorable bids.

APPROPRIATION TITLE
CONSTRUCTION, GENERAL

CLASSIFICATION, NAVIGATION
RCS-DAEN-CUB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
MRGO	87,200,000	71,475,000	6,916,000	230,000	8,579,000
RELOCATIONS	11,230,000	11,230,000	0	0	0
CHANNELS & CANALS	48,287,000	48,287,000	0	0	0
BREAKWATERS&SEAWALLS	7,541,000	7,541,000	0	0	0
LEVEES&FLOODWALLS	10,556,000	4,406,000	6,482,000	0	0
PERM OP EQUIP	7,000	7,000	0	0	7,590,000
ENGR & DESIGN	5,190,000	4,681,000	316,000	90,000	163,000
SUPERVISION & ADMIN	4,407,000	3,303,000	118,000	140,000	826,000
SHIPLOCK	576,000,000	8,007,000	242,000	1,770,000	567,881,000
RELOCATIONS	216,480,000	0	0	0	216,480,000
LOCKS	276,314,000	0	0	0	276,314,000
CHANNELS & CANALS	3,185,000	0	0	0	3,185,000
LEVEES&FLOODWALLS	12,185,000	0	0	0	12,185,000
PERM OP EQUIP	36,000	0	0	0	36,000
ENGR & DESIGN	31,000,000	6,819,000	202,000	1,300,000	21,300,000
SUPERVISION & ADMIN	36,000,000	1,188,000	40,000	416,000	34,402,000
FED AND NON-FED					
TOTAL COST - SCHED	668,000,000	80,282,000	7,158,000	2,000,000	576,480,000
UNDELIVERED ORDERS	0	940,000	-940,000	0	0
TOTAL OBLIGATIONS	0	81,282,000	6,218,000	2,000,000	576,480,000
FEDERAL FUNDS					
TOTAL COST - SCHED	491,000,000	80,282,000	7,158,000	2,000,000	401,480,000
UNDELIVERED ORDERS	0	940,000	-940,000	0	0
TOTAL OBLIGATIONS	0	81,282,000	6,218,000	2,000,000	401,480,000
NON-FEDERAL FUNDS					
TOTAL COST - SCHED	175,000,000	0	0	0	175,000,000
UNDELIVERED ORDERS	0	0	0	0	0

EFFECTIVE DATE 01 JAN 86

DIVN,LOWER MISSISSIPPI DIST,NEW ORLEANS DISTRICT

WALL REGION, LOWER MISSISSIPPI BASIN, COASTAL LOUISIANA

PROJECT,MISS. RIVER GULF OUT LET

4 FEB 1985

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APPROPRIATION TITLE
CONSTRUCTION, GENERAL

CLASSIFICATION, NAVIGATION
RCS-DAEN-CUB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
TOTAL OBLIGATIONS	0	0	0	0	175,000,000

EFFECTIVE DATE 01 JAN 86

DIVN, LOWER MISSISSIPPI VALL
DIST, NEW ORLEANS DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, COASTAL LOUISIANA

PROJECT, MISS. RIVER GULF OUT LET

4 FEB 1986

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APPROPRIATION TITLE
CONSTRUCTION,GENERAL

CLASSIFICATION, NAVIGATION
RCS-DAEN-CUB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FED AND NON-FED					
ALLOCATIONS		$1,340,000	6,200,000		
UNOB CARRYOVER PFY			18,000		
TOTAL AVAIL FOR OBL		0	6,218,000		
APPROPRIATION REQUIRED				2,000,000	576,460,000
FEDERAL FUNDS					
ALLOCATIONS		$1,340,000	6,200,000(1)		
UNOB CARRYOVER PFY			18,000		
TOTAL AVAIL FOR OBL		0	6,218,000		
APPROPRIATION REQUIRED				2,000,000	401,460,000
FUTURE FEDERAL REQUIREMENTS					
FISCAL YEAR 1988					3,100,000
FISCAL YEAR 1989					4,100,000
FISCAL YEAR 1990					1,500,000
FISCAL YEAR 1991					1,100,000
REMAINING BALANCE					301,260,000(2)
NON-FEDERAL FUNDS					
CONTRIBUTIONS		0	0		
UNOB CARRYOVER PFY					
TOTAL AVAIL FOR OBL		0	0		
CONTRIBUTION REQUIRED				0	175,000,000
FUTURE NON-FED REQUIREMENTS					
FISCAL YEAR 1988					0
FISCAL YEAR 1989					0
FISCAL YEAR 1990					0
FISCAL YEAR 1991					0
REMAINING BALANCE					175,000,000

EFFECTIVE DATE 01 JAN 86

DIVN,LOWER MISSISSIPPI VALL REGION, LOWER MISSISSIPPI
DIST,NEW ORLEANS DISTRICT BASIN, COASTAL LOUISIANA

PROJECT,MISS. RIVER GULF OUT LET

4 FEB 1986

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APPROPRIATION TITLE
CONSTRUCTION,GENERAL

CLASSIFICATION, NAVIGATION
RCS-DAEN-CUB-15

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
NON-FEDERAL COSTS CASH CONTRIBUTIONS	N/A				
OTHER COSTS					
LANDS & DAMAGES	49,487,000	7,487,000			42,000,000
RELOCATIONS	800,572,000	583,000			800,000,000
DISPOSAL AREAS	831,000	831,000			
TOTAL NON-FED COSTS	850,890,000	8,811,000			850,000,000
TOTAL FED (CORPS) & N/F	750,000,000	89,193,000	7,155,000	2,000,000	652,449,000

(1) REFLECTS $1,000.0 REDUCTION ASSIGNED AS SAVINGS AND SLIPPAGE.
(2) INCLUDES $361,810.0 UNSCHEDULED WORK.

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EFFECTIVE DATE 01 JAN 86

DIVN,LOWER MISSISSIPPI DIST,NEW ORLEANS DISTRICT

WALL REGION, LOWER MISSISSIPPI BASIN, COASTAL LOUISIANA

PROJECT,MISS. RIVER GULF OUT LET

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APPROPRIATION TITLE: Construction General - Channels and Harbors (Navigation)

PROJECT: Mississippi River Ship Channel, Gulf to Baton Rouge, Louisiana (Continuing)

LOCATION: The project is located in the southeast portion of Louisiana below Baton Rouge, Louisiana, consisting of the Mississippi River and its major outlet to the Gulf, Southwest Pass.

AUTHORIZATION: Supplemental Appropriation Act, FY 1985 (Public Law 99-88).

BENEFIT-TO-COST RATIO: The remaining benefit-remaining cost ratio is 9.8 to 1 at 8 1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 8.1 to 1. The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			STATUS: (1 January 1986)		
				PERCENT COMPLETE	COMPLETION SCHEDULE
Estimated Appropriations Requirement (CoE)		168,000,000	Entire Project	0	Indefinite 5/
Scheduled Construction	112,263,000				
Unscheduled Construction	55,737,000				
Estimated Appropriation Requirement (Coast Guard)		27,000			
Scheduled Construction	27,000				
Unscheduled Construction	0				
Estimated Total Appropriation Requirement		168,027,000			
Scheduled Construction	112,290,000				
Unscheduled Construction	55,737,000				
Future Non-Federal Reimbursement		15,092,000			
Scheduled Construction	15,092,000				
Unscheduled Construction	0				

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Division: Lower Mississippi Valley District: New Orleans Region: Lower Mississippi

Mississippi River Ship Channel, Gulf to Baton Rouge, LA

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SUMMARIZED FINANCIAL DATA

				Accm.% of Est. Fed. (COE) Cost
Estimated Federal Cost (Ultimate)			152,935,000	
Scheduled Construction		97,198,000		
Unscheduled Construction		55,737,000		
Estimated Non-Federal Cost			339,092,000	
Scheduled Construction		78,561,000		
Cash Contribution	46,757,000			
Other Costs	16,712,000			
Reimbursements:	15,092,000			
Navigation 15,092,000				
Unscheduled Construction		260,531,000		
Cash Contribution	54,243,000			
Other Costs	206,288,000			
Reimbursements	0			
Total Estimated Scheduled Construction Cost			175,759,000	
Total Estimated Unscheduled Construction Cost			316,268,000	
Total Estimated Project Cost			492,027,000	
Allocations to 30 September 1985		696,000 1/		
Conference Allowance for FY 1986		1,255,000 2/		
Potential Allocation for FY 1986		4,055,000 3/		
Potential Allocations through FY 1986		4,751,000		2
Allocation Requested for FY 1987		9,000,000 4/		5
Scheduled Balance to Complete after FY 1987		98,512,000		
Unscheduled Balance to Complete after FY 1987		55,737,000 5/		

1/ Includes $656,000 for Continuation of Planning and Engineering and $40,000 for Construction.
2/ Continuation of Planning and Engineering completion funds.
3/ Includes $2,800,000 for Construction.
4/ Obligation and expenditure of budgeted funds for construction of this project are contingent upon enactment of legislation enabling recovery of all or part of the costs to be expended by the project sponsor and the Federal Government, in accordance with the agreement between the Administration and the Senate Majority Leadership
5/ Construction of the channel above Mile 181 and below 50 feet to Mile 181 is unscheduled pending execution of an agreement with the local sponsor to share in construction cost consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

Mississippi River Ship Channel, Gulf to Baton Rouge, LA

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PHYSICAL DATA

Channels and Canals:
Southwest Pass: 55 feet deep (Mean Low Gulf) by 750 feet wide, 17.5 miles.
Southwest Pass Bar Channel: 55 feet deep (Mean Low Gulf) by 600 feet wide from Mile 18.0 below Head of Passes to the -55 feet (Mean Low Gulf) contour in the Gulf of Mexico (Mile 22.1 below Head of Passes)
Mississippi River: 55 feet deep (Mean Low Gulf) by 750 feet wide, 233 miles long.
Baton Rouge Turning Basin: 55 feet deep (Mean Low Gulf) by 1,600 feet wide, 4,000 feet long.

Breakwaters and Seawalls:
Control and contraction structures in South Pass and Pass a Loutre. Size and number of structures to be determined after future planning.

Mitigation Measures:
Underwater dredged material sill at Mile 64 Above Head of Passes (top elevation -55.0 Mean Low Gulf), and a pumping station with raw water supply pipelines to East and West Pointe a la Hache and a Boothville treatment plant.

JUSTIFICATION: Restrictions imposed by the dimensions of the existing deep-draft approaches to the ports of New Orleans and Baton Rouge, together with the projected increase in commerce through these ports, prevent the effective utilization of the ports by an increasing percentage of ships that cannot navigate those approaches fully loaded. The ports of New Orleans and Baton Rouge are the number one and number five ports in the United States, respectively according to latest data, based on the total tonnage of waterborne commerce. Much of this commerce is in liquid bulk and dry bulk oceangoing cargo which could be shipped much more economically if a deeper channel was available. The cargo is now shipped in smaller ships or in lightly loaded larger ships over the existing 40-foot deep channel. The provision of deep channels would result in significant savings in the transportation cost of the oceangoing commerce moving over the channel. The average annual benefits, all navigation, are $1,536,000 based on 1 October 1985 prices.

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FISCAL YEAR 1987: The requested amount of $9,000,000 will be applied as follows:

Initiate:	
Lands and Damages - Saltwater Intrusion Mitigation	$ 558,000
Initiate and Complete:	
Dredge Mile 3.5 above Head of Passes to Mile 4.0 below Head of Passes, 45'	2,395,000
Dredge Mile 4.0 below Head of Passes to Mile 5.0 below Head of Passes, 45'	516,000
Dredge Mile 12.0 below Head of Passes to Mile 13.0 below Head of Passes, 45'	516,000
Dredge Mile 5.0 below Head of Passes to Mile 12.0 below Head of Passes, 45'	3,022,000
Complete:	
Dredge Mile 18.8 below Head of Passes to Mile 13.0 below Head of Passes, 45'	995,000
Engineering and Design	668,000
Supervision and Administration	330,000
Total	$9,000,000

The funds requested will allow for continuation of the construction features and initiation of the saltwater mitigation measures and are the minimum required to meet the scheduled completion date.

NONFEDERAL COSTS: Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership for scheduled construction, local interests will be required to provide lands, easements, rights-of-way, and material disposal areas, presently estimated at $400,000; modify or relocate pipelines and submarine cables where necessary for the construction of the project, presently estimated at $15,182,000; pay all costs to dredge New Orleans harbor, presently estimated at $1,130,000; and pay 25 percent of the construction costs required to deepen the channel to 45 feet to Mile 181, and 50 percent of the construction costs required to deepen the channel from 45 to 50 feet to Mile 181, presently estimated at $46,757,000; pay an additional 10 percent of the costs allocated to deep-draft navigation within a period of 30 years following completion, currently estimated at $15,092,000; and pay 50 percent for the annual cost of incremental maintenance below 45 feet below mean low water currently estimated at $8,700,000.

STATUS OF LOCAL COOPERATION: Assurances for the scheduled portion of the project consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership will be obtained by 30 June 1986.

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COMPARISON OF FEDERAL (CORPS OF ENGINEERS) COST ESTIMATE: The current Federal cost estimate of $168,000,000 is a decrease of $152,124,000 from the last estimate of $320,124,000. This change includes increases of $20,080,000 based on higher price levels to 1 October 1985; $22,000,000 for an estimated inflation allowance from 1 October 1985 thru the construction period; and $1,152,000 for additional Lands and Damages based on more detailed planning of construction.

These increases were offset by decreases that included $43,548,000 in Engineering and Design and in Supervision and Administration as a result of recent reanalysis of requirements; $50,808,000 based on more detailed planning of construction; and $101,000,000 based on adjustments between Federal and non-Federal cost estimates consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Environmental Protection Agency on 2 July 1982. A Supplemental Information Report to this final Environmental Impact Statement addressing the prototype dredging of Fairview Crossing was filed with the Environmental Protection Agency in July 1983. A similar report addressing construction of a prototype saltwater intrusion sill was filed with the Environmental Protection Agency in September 1983. Two Supplemental Information Reports documenting additional studies of the Venice, Louisiana to the Gulf of Mexico reach and the underwater dredged material sill at Mile 64 above Head of Passes, to mitigate for increased saltwater intrusion, were filed with the Environmental Protection Agency in August 1985, and September 1985, respectively. Another Supplemental Information Report documenting additional studies for the Venice, Louisiana to Mile 181 above Head of Passes reach, is scheduled for submission to the Environmental Protection Agency in the third quarter of FY 1987.

The provisions of Section 404 of the Clean Water Act have been met for the Venice, Louisiana to Gulf of Mexico reach by the District Engineer's signature on the Section 404 (b) (1) Evaluation Report on 19 October 1984 and the issuance of a certification from the State of Louisiana dated 4 June 1984. The same provisions for the Venice, Louisiana to Mile 181 reach is scheduled to be met by the District Engineer's signature on the Section 404 (b) (1) Evaluation Report in the second quarter of FY 1986 and a certification from the State of Louisiana in the third quarter of FY 1986.

OTHER INFORMATION: Funds to initiate construction were appropriated in FY 1985.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Lower Mississippi Valley
District: New Orleans

Project: Mississippi River Ship Channel, Gulf to Baton Rouge, Louisiana

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost	320,124 1/		320,124 1/		168,000 2/
(Price Level)	(October 1983)		(October 1983)		
Reason for Change		0		(-152,124) 2/	
a. Price Escalation		0		42,080	
b. Design Changes		0			
c. Additional Function Added Under General Authorization		0			
d. Authorized Modification		0			
e. Post-Contract Award and Other Estimating Adjustments		0		-93,204 3/	
f. Schedule Changes		0			
g. Sundry		0		-101,000 4/	
h. Real Estate		0			

1/ Excludes the estimated inflation allowance through the construction period.
2/ Includes $22,000 allowance for the estimated inflation from 1 October 1985 through the construction period.
3/ Reanalysis of unit prices and dredging quantities.
4/ Decreased $101,000 based on adjustments between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

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APPROPRIATION TITLE
CONSTRUCTION,GENERAL

CLASSIFICATION, NAVIGATION
RCS-DAEN-CUB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
LANDS & DAMAGES	1,330,000	0	0	558,000	772,000
CHANNELS & CANALS	142,220,000	0	4,240,000	10,112,000	127,868,000
BREAKWATERS&SEAWALLS	84,115,000	0	0	0	84,115,000
PUMPING PLANTS	15,500,000	0	0	0	15,500,000
ENGR & DESIGN	8,685,000	0	1,980,000	890,000	5,815,000
SUPERVISION & ADMIN	17,150,000	0	115,000	440,000	16,595,000
FED AND NON-FED					
TOTAL COST - SCHED	269,000,000	0	6,335,000	12,000,000	250,665,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	6,335,000	12,000,000	250,665,000
FEDERAL FUNDS					
TOTAL COST - SCHED	168,000,000	0	4,751,000	9,000,000	154,249,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	4,751,000	9,000,000	154,249,000
NON-FEDERAL FUNDS					
TOTAL COST - SCHED	101,000,000	0	1,584,000	3,000,000	96,416,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	1,584,000	3,000,000	96,416,000

EFFECTIVE DATE 01 JAN 86

DIVN,LOWER MISSISSIPPI VALL REGION, LOWER MISSISSIPPI
DIST,NEW ORLEANS DISTRICT BASIN, COASTAL LOUISIANA

PROJECT,MISS RIVER SHIP CH

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APPROPRIATION TITLE
CONSTRUCTION, GENERAL

CLASSIFICATION, NAVIGATION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FED AND NON-FED					
ALLOCATIONS		696,000	5,639,000		
UNOB CARRYOVER PFY			696,000		
TOTAL AVAIL FOR OBL		0	6,335,000		
APPROPRIATION REQUIRED				12,000,000	250,665,000
FEDERAL FUNDS					
ALLOCATIONS		696,000	4,855,000(1)		
UNOB CARRYOVER PFY			696,000(2)		
TOTAL AVAIL FOR OBL		0	4,751,000		
APPROPRIATION REQUIRED				9,000,000	154,249,000(3)
				FUTURE FEDERAL REQUIREMENTS	
				FISCAL YEAR 1988	8,300,000
				FISCAL YEAR 1989	7,500,000
				FISCAL YEAR 1990	35,200,000
				FISCAL YEAR 1991	32,900,000
				REMAINING BALANCE	70,349,000
NON-FEDERAL FUNDS					
CONTRIBUTIONS					
UNOB CARRYOVER PFY		0	1,584,000		
TOTAL AVAIL FOR OBL		0	1,584,000		
CONTRIBUTION REQUIRED				3,000,000	96,416,000
				FUTURE NON-FED REQUIREMENTS	
				FISCAL YEAR 1988	2,700,000
				FISCAL YEAR 1989	2,500,000
				FISCAL YEAR 1990	11,800,000
				FISCAL YEAR 1991	10,900,000
				REMAINING BALANCE	68,516,000

(1) INCLUDES $1255.0 CP&E FUNDS.
(2) INCLUDES $696.0 CP&E CARRYOVER AND $40.0 CONSTR. CARRYOVER.
(3) INCLUDES $55,737,000 UNSCHEDULED WORK.

EFFECTIVE DATE
01 JAN 86

DIVN, LOWER MISSISSIPPI VALL REGION, LOWER MISSISSIPPI
DIST, NEW ORLEANS DISTRICT BASIN, COASTAL LOUISIANA

PROJECT, MISS RIVER SHIP CH

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APPROPRIATION TITLE: Construction General - Locks and Dams (Navigation)

PROJECT: Red River Waterway - Mississippi River to Shreveport, LA (Continuing)

LOCATION: The project is located in central and northwest Louisiana and will provide a navigation route from the Mississippi River at its juncture with Old River via Old and Red Rivers to Shreveport, LA.

AUTHORIZATION: River and Harbor Act of 1968 and Water Resources Development Act of 1976, as modified by PL 98-181.

BENEFIT TO COST RATIO: Remaining benefit - remaining cost ratio is 1.7 to 1 at 3-1/4 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1973) was 1.2 to 1. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Federal Cost (Corps of Engineers)		$1,582,000,000	
Estimated Federal Cost (U. S. Coast Guard)		294,000	
Estimated Non-Federal Cost		89,984,000	
Cash Contributions	$45,297,000		
Other	44,687,000		
Total Estimated Project Cost		$1,672,278,000	
Allocations to 30 September 1985		$ 619,778,000	
Conference Allowance for FY 1986		95,700,000	
Allocation for FY 1986		95,700,000	
Allocations to Date		715,478,000 1/	45
Allocation Requested for FY 1987		38,000,000	48
Scheduled Balance to Complete After FY 1987		50,679,000	
Unscheduled Balance to Complete After FY 1987		777,843,000	

Status: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	40	Indefinite 2/
Pool 1	91	Mar 1987
Pool 2	52	Sep 1988
Pool 3	18	Indefinite 2/
Pool 4	7	Indefinite 2/
Pool 5	4	Indefinite 2/
Open to 9-Foot Navigation		
Lock and Dam No. 1		Jul 1987
John H. Overton Lock and Dam		Jul 1987
Lock and Dam No. 3		Indefinite 2/
Lock and Dam No. 4		Indefinite 2/
Lock and Dam No. 5		Indefinite 2/

1/ Includes $26,654,000 for Overton-Red River Waterway and $21,653,000 for Red River Emergency Bank Protection for construction work.

2/ Completion of Lock and Dam Nos. 3, 4, and 5 is indefinite pending a decision to continue construction in Pool 3 and to initiate construction in Pools 4 and 5.

Division: Lower Mississippi Valley District: Vicksburg Region: Arkansas-White-Red

Red River Waterway - Mississippi River to Shreveport, LA

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PHYSICAL DATA

Channels and Canals:
Channel 9 feet deep, 200 feet wide, and 236 miles long from Old River to Shreveport, LA
Total length of bank protection - 273 miles

Locks: Number - 5; Size - 84 feet by 685 feet

Dams: Number - 5; Type - Tainter Gated

Relocations: Roads (Modify one bridge) $342,000
Railroads (Replace one and modify one bridge) $44,009,000

JUSTIFICATION: In its present state, the Red River is a very erratic river subject to wide fluctuations in stage and meandering because of the erodible soils. For navigation to be a reality on Red River, a system of dependable pools and a properly aligned channel are necessary. The pools will be provided by locks and dams and the proper alignment will be provided by bank and channel stabilization works. These works also would preserve lands and improvements along the navigation route. With the present open river conditions, the controlling depths for navigation from January to July are 9 feet from the Mississippi River to the mouth of the Black River, 6 feet from the mouth of the Black River to Alexandria, LA, and 5 feet to Shreveport, LA. During the remainder of the year, controlling depths are generally about 9 feet from the Mississippi River to the mouth of the Black River, about 4 feet from there to Alexandria, and 1 to 2 feet to Shreveport.

Navigation from the Mississippi River to Shreveport will provide an artery for low-cost transportation which, in combination with the abundant natural resources, will stimulate economic growth of the region. Estimated savings are based on an average annual movement of 6,502,000 tons. Commodities to be carried over the waterway include iron and steel articles and pipe, industrial chemicals, paper and allied paper products, petroleum and petroleum products, other metals and ores, sulphur, agricultural chemicals, and grain. The public will realize an average annual savings of $41,000,000 which will result from reduced transportation costs. The project is credited with benefits derived from transportation savings from use of the waterway, flood control, damages prevented by bank stabilization, security against levee crevasses, fish and wildlife, recreation, area redevelopment, reduced maintenance on existing revetments, reduced sedimentation, irrigation, reduced costs of municipal and industrial water supply, and reduced pumping costs. The average annual benefits and designated redevelopment areas are as follows:

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Benefits	Amount (1 October 1985)
Navigation	$ 84,743,000
Flood Control	2,788,000
Bank Stabilization	25,243,000
Fish and Wildlife	459,000
Recreation	4,435,000
Area Redevelopment	16,920,000
Other:	
Irrigation and reduced costs of municipal and industrial water supply	56,000
Total Annual Benefits	$134,644,000

Redevelopment Areas (PL 89-136)

State and County or Parish	Title	Subsection
Arkansas		
Columbia	IV	(8)
Lafayette	IV	(8)
Miller	IV	(8)
Louisiana		
Avoyelles	IV	(2,8)
Bienville	IV	(8)
Bossier	IV	(8)
Caddo	IV	(8)
Catahoula	IV	(8)
Concordia	IV	(8)
De Soto	IV	(8)
Evangeline	IV	(8)
Grant	IV	(8)
La Salle	IV	(8)
Louisiana (Cont)		
Natchitoches	IV	(1,2)
Pointe Coupee	IV	(1)
Rapides	IV	(8)
Red River	IV	(2,8)
Sabine	IV	(8)
St. Landry	IV	(8)
Vernon	IV	(8)
Webster	IV	(8)
Winn	IV	(8)
Texas		
Cass	IV	(8)
Harrison	IV	(8)
Marion	IV	(2,8)

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FISCAL YEAR 1987: The requested amount of $38,000,000 will be applied as follows:

Pool 1	
Initiate:	
Lock and Dam No. 1 Rec Area, Phase I	$1,183,000
Ben Routh Rec Area	786,000
Initiate and Complete:	
Initial Dredging	317,000
Miscellaneous Hired Labor	42,000
Engineering and Design	224,000
Supervision and Administration	282,000
Subtotal Pool 1	$2,834,000
Pool 2	
Initiate:	
Darrow/Bertrand Realignment and Levee Setback	$3,719,000
Deloges Bluff Revetment	4,420,000
Alexandria Rec Area	576,000
Continue:	
L&A Railroad Bridge	9,300,000
Complete:	
Lock and Dam No. 2	4,793,000
Colfax Revetment	584,000
Alexandria Front Revetment	1,000,000
Ft. Buhlow Phase II Rec Area	362,000
Boyce Cutoff Phase I Rec Area	330,000
Miscellaneous Hired Labor	213,000
Engineering and Design	1,200,000
Supervision and Administration	2,900,000
Subtotal Pool 2	$29,397,000

Pool 3		Pool 4	
Engineering and Design	$2,489,000	Engineering and Design	$ 2,230,000
Supervision and Administration	350,000	Supervision and Administration	160,000
Subtotal Pool 3	$2,839,000	Subtotal Pool 4	$ 2,390,000
		Pool 5	
		Engineering and Design	$ 500,000
		Supervision and Administration	40,000
		Subtotal Pool 5	$ 540,000
		GRAND TOTAL	$38,000,000

The funds requested will be used to complete construction of John H. Overton Lock and Dam, continue the comprehensive plan to stabilize and realign the river, initiate three and complete two recreation areas in Pools 1 and 2, and continue planning in Pools 3, 4, and 5 to provide for sequential construction. The individual items contribute to the overall plan and also prevent the loss of valuable lands and improvements including the Red River levee protection system.

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NON-FEDERAL COST: Local interests are required to provide all lands, easements, and rights-of-way, including a proportionate share of the cost of the bridge relocations over existing channels in accordance with the principles of Section 6 of the Bridge Alteration Act (Truman-Hobbs) of 21 June 1940, as amended by the Act of 16 July 1952, 25 percent of the cost of necessary retaining dikes for dredged materials and 50 percent of the total cost of recreation facilities. These costs are broken down as follows:

Lands and Damages	$36,181,000
Utility Relocations	8,506,000
Cash Contribution:	45,297,000
Recreation Facilities	(39,514,000)
Bridge Relocations	(723,000)
Retaining Dikes	(5,060,000)
Total	$89,984,000

Local interests are also required to operate and maintain recreation facilities and bridges, and to contribute 25 percent of the construction cost of dikes required for maintenance dredging at an estimated annual cost of $2,160,000 which includes $275,900 for replacements.

STATUS OF LOCAL COOPERATION: Formal assurances of local cooperation were furnished by the Red River Waterway Commission on 26 February 1969 and accepted on behalf of the United States on 15 April 1969. That agency was formed expressly to provide the local cooperation required for the project and has levied a 2-mill assessment to fulfill its obligations. Amended assurances covering the provisions of the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, and the specific written agreement requirements of Section 221 of the Flood Control Act of 1970, Public Law 91-611, were executed by the Red River Waterway Commission on 23 May 1973 and were accepted on behalf of the United States on 14 November 1973. A cost-sharing agreement for recreation facilities in Pools 1 and 2 was approved by the Deputy Chief of Engineers on 23 July 1985.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $1,582,000,000 is an increase of $65,000,000 over the latest estimate ($1,517,000,000) submitted to Congress. This change includes increases of $39,303,000 for adjustments in the estimated inflation allowance on Pools 1, 2, and 3 through the construction period, $10,310,000 based on quantity overruns, $8,031,000 for modifications, $18,988,000 based on more detailed design of recreation facilities, $2,100,000 for shoal removal at Lock and Dam 1, $400,000 for storage barge, $976,000 for timber silt barrier and $1,026,000 for dewatering at Lock and

Dam 1, $100,000 for emergency levee setback, $14,000 for actual cost, $573,000 additional hired labor based on reanalysis of requirements, $1,278,000 additional Engineering and Design and $1,470,000 additional Supervision and Administration based on reanalysis of requirements; partially offset by decreases of $8,256,000 based on more detailed planning of construction and relocation, $5,287,000 based on contract awards and $6,026,000 based on adjustment in contingencies.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement (EIS) was filed with the Council on Environmental Quality on 11 May 1973. The final Supplement No. 1 was filed with the Council on Environmental Quality on 25 February 1977. A second supplement was prepared to document the expanding base of data and design information being developed and accompanied the General Reevaluation Report. The final report was submitted to the Environmental Protection Agency on 10 November 1983, and the record of decision was signed by the Division Engineer on 4 January 1984.

The provisions of Section 404 of the Clean Water Act have been met for the John H. Overton Lock and Dam by a Section 404(b)(1) Evaluation, a public notice issued 25 January 1980, a certification issued by the State of Louisiana on 15 April 1980, and the District Engineer's signature on the Section 404 Evaluation on 18 December 1979. In accordance with Environmental Protection Agency Guidelines issued 24 December 1980, a supplemental Section 404(b)(1) Evaluation was prepared and signed by the District Engineer on 18 May 1982.

The provisions of Section 404 of the Clean Water Act have been met for Lock and Dam No. 3 by a Section 404(b)(1) Evaluation. A Public Notice was issued 24 December 1984, a Certificate issued by the State of Louisiana on 7 February 1985, and the District Engineer's signature on the Section 404 Evaluation on 28 February 1985. The provisions of Section 404 of the Clean Water Act will be followed as detailed plans for individual work items are developed. Schedule for compliance with Section 404 requirements for items of work with FY 87 funds are as follows:

Item	Issue Public Notice	State Certificate	Date of District Engineer Signature
Pool 1			
Lorran Lake	--	--	19 Apr 76
Joffrion	22 Dec 83	--	17 Jan 84
Hog Lake	2 Apr 85	15 May 85	15 May 85
Bayou Cocodrie Dikes	4 Sep 85	16 Oct 85	16 Oct 85

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Item	Issue Public Notice	State Certificate	Date of District Engineer Signature
Pool 1 (Cont)			
Initial Dredging	4th Qtr 86	4th Qtr 86	1st Qtr 87
Lock and Dam No. 1 Rec Area Phase I	3rd Qtr 86	4th Qtr 86	4th Qtr 86
Ben Routh Rec Area	4th Qtr 86	4th Qtr 86	1st Qtr 87
Larto	2 Apr 85	15 May 85	15 May 85
Hadden-Ft. Derussy Capout	2nd Qtr 86	2nd Qtr 86	2nd Qtr 86
Delhoste Dike	2nd Qtr 86	3rd Qtr 86	3rd Qtr 86
Pool 2			
L&A Bridge		Meets Nationwide Permit	
MoPac Bridge		Meets Nationwide Permit	
Grand Bend	3 Mar 76	--	19 Apr 77
England	3 Mar 76	--	19 Apr 76
Colfax	11 Oct 85	17 Dec 85	2nd Qtr 86
Wiggins Ph 2	3 Mar 76	--	19 Apr 76
Darrow/Bertrand	30 Aug 76	--	21 Mar 77
Deloges Bluff	30 Aug 76	--	9 Nov 83
Alexandria Front	30 Aug 76	--	9 Nov 83
Boyce	5 Dec 84	11 Feb 85	14 Feb 85
Ft. Buhlow Rec Area Phase II		Not Required	
Boyce Cutoff Rec Area Phase I	3rd Qtr 86	4th Qtr 86	4th Qtr 86
Alexandria Rec Area	4th Qtr 86	1st Qtr 87	1st Qtr 87
Philip Bayou/Buhlow	3 Mar 76	--	19 Apr 76
Pool 3			
Lock and Dam No. 3	24 Dec 84	7 Feb 85	28 Feb 85

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1971 and allotted in FY 1972. Funds to initiate construction were appropriated in FY 1973.

The following wording was contained on page 15 of the Senate Report 98-275, to the Supplemental Appropriations Bill, 1984: "The Committee has included a section which provides that funds available for the Red River Waterway project shall be used to provide for the design and construction of a replacement bridge for the Louisiana and Arkansas Railway Co., near Alexandria, La. The new bridge will replace an existing bridge between Alexandria and Pineville, La., which would have interferred with navigation on the Red River Waterway. The total Federal cost of the bridge replacement shall be limited to $24,270,000 (July 1, 1983 price levels) adjusted for fluctuations in construction costs plus the cost of any necessary real estate interests.

The cost of the bridge replacement will exceed the cost of modifying the existing railroad bridge to provide suitable navigation along the Red River Waterway; however, the Federal Highway Administration notes that it is proceeding with construction of Interstate 49 in the Alexandria area and that approximately $10,800,000 in Federal highway funds can be saved if the railroad bridge is relocated in advance of highway construction. This provision will provide for coordinated development of the two projects and will result in an anticipated savings of approximately $5,000,000 in public funds when increased bridge construction costs are offset against Federal highway savings.

The railway company will remove its existing bridge and piers at its own expense. Any real estate interests acquired by the Corps of Engineers as part of the bridge replacement may be transferred to the railway company upon completion of construction. Construction of the replacement structure will be upon terms and conditions acceptable to the Chief of Engineers in the interest of navigation and the expeditious completion of the project. The work will be undertaken in accordance with an agreement to be entered into between the Chief of Engineers and the railway company."

A Memorandum of Understanding on cost apportionment and relative project responsibilities was approved by the Acting Assistant Secretary of the Army (Civil Works) on 11 January 1985 and subsequently signed by representatives of the Louisiana and Arkansas Railway Company, Federal Highway Administration, Louisiana Department of Transportation and Development, and the Corps. A contract was awarded to the Louisiana and Arkansas Railway Company on 6 November 1985 to prepare plans and specifications and construct the bridge. Construction is scheduled to begin September 1986 and be complete in March 1988; the old bridge is to be removed by July 1988.

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The following wording was contained on pages 38 and 39 of the Senate Report 98-502, to the Energy and Water Development Appropriations Bill, 1985: "An amount of $500,000 is also provided in the bill for construction of lock and dam No. 3. The Corps of Engineers is directed, with the additional funds provided for the project, to proceed with construction of lock and dam No. 3 and to expedite planning and design on the remainder of the overall project. The Corps is further directed to proceed with bank stabilization and channel realignment at a rate so as not to delay opening the project to navigation. Within available funds, the Corps should take the necessary steps to stabilize the banks adjacent to the railroad right-of-way at Carroll Cutoff (mile 229) until such time as the river is realined as part of the work on pool No. 4."

The following wording was contained on page 31 of the House Report 98-755 accompanying the FY 1985 Energy and Water Development Appropriation Act: "The bill includes $93,990,000, an increase of $13,890,000 for the Red River Waterway Mississippi River to Shreveport, Louisiana project. The increase includes $13,690,000 for continuation of work in Pool 1 and $200,000 for initiation of work on Pool 3. Within available funds, the Corps should take the necessary steps to stabilize the banks adjacent to the railroad right-of-way at Carroll Cutoff (Mile 229) until such time as the river is realigned as part of the work on Pool 4."

The following wording was contained on page 17 of the Conference Report 98-866 to the Energy and Water Development Appropriations Bill, 1985: ". . . and appropriates $500,000 for the construction of Lock and Dam 3, Red River Waterway, Louisiana project as proposed by the Senate."

A contract for initial construction of Lock and Dam No. 3 was awarded 11 September 1985. Two follow-on contracts are scheduled for award in February and May 1986. Planning and design on the remainder of the project is being expedited. Bank stabilization of railroad right-of-way at Carroll Cutoff in Pool 4 will not be undertaken because the work is not authorized under existing laws.

The following wording is contained on page 34 of the House Report No. 99-195 and page 41 of the Senate Report No. 99-110 to the Energy and Water Development Appropriation Bill, 1986: "The Committee is aware that Public Law 98-360 directed initiation of construction of lock and dam No. 3 on the Red River Waterway project. However, the Secretary of the Army continues to delay construction and at this time is planning to award only a small contract for an access road. The Committee considers this action to be most inefficient and more costly to the Federal Government. Continued delay of the realignment and bank stabilization measures are causing extensive erosion and bank caving which is threatening public and private facilities and will continue to result in increased dredging costs for the completed portion of the project.

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The Committee is also aware that a draft recreation cost-sharing agreement has been under development since 1983 and that non-Federal interests have recently agreed to cost share in these facilities in accordance with the administration's policy for cost sharing. Although construction of the navigation facilities at pool 1 are complete, and near completion at pool 2, development of the recreation potential continues to be delayed. Accordingly, the Committee has added $5,700,000 to the bill to ensure that significant construction is commenced and directs the Corps of Engineers to initiate continuing contracts in fiscal year 1986 for continuation of lock and dam No. 3, realignment and bank stabilization measures at pools 3, 4, and 5, and recreation facilities at pools 1 and 2."

The following language was contained on page 14 of Conference Report 99-307 accompanying the FY 1986 Energy and Water Development Appropriations Act: "Earmarks $5,700,000 for construction of Lock and Dam No. 3, Red River Waterway, Louisiana, project authorized by the River and Harbor Act of 1968, as amended (P.L. 90-483) as proposed by the Senate."

The following language was contained in the FY 1986 Energy and Water Development Appropriations Act, Public Law 99-141: ". . . in addition, $95,700,000, to remain available until expended, for construction of the Red River Waterway, Mississippi River to Shreveport, Louisiana project, of which $5,700,000 is for construction of Lock and Dam No. 3; . . ."

A contract between the Federal Government and the State of Louisiana for cost-shared recreational development in Pools 1 and 2 was approved by the Deputy Chief of Engineers on 23 July 1985. A Memorandum of Understanding presenting a detailed plan to implement construction has been prepared and forwarded to the Red River Waterway Commission for execution. Two follow-on contracts for construction of Lock and Dam No. 3 are scheduled for award in February and May 1986. The remainder of Lock and Dam No. 3 is not scheduled for construction. Realignment and bank stabilization measures in Pools 3, 4, and 5 are not scheduled for construction.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Lower Mississippi Valley
District: Vicksburg

Project: Red River Waterway - Mississippi River to Shreveport, LA

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Changes (4)	Current (5)
Federal Cost (Price Level)	$393,000 (Jul 1971)		$1,517,000 3/		$1,582,000 2/3/
Reason for Change		($1,124,000) 3/		($65,000) 2/	
a. Price Escalation		791,976		39,303	
b. Design Changes		208,162		3,948 4/	
c. Additional Function Added Under General Authorization		15,140		0	
d. Authorized Modification		11,139		0	
e. Post-Contract Award and Other Estimating Adjustments		97,277 1/		21,749 5/	
f. Schedule Changes		0		0	
g. Sundry		306		0	
h. Real Estate		0		0	

1/ Increases based on contract modifications, construction overruns, actual cost of completed work, more detailed design of Lock and Dam No. 3 structure, and a reevaluation of Engineering and Design and Supervision and Administration requirements; partially offset by decreases based on favorable bids received and more detailed planning of construction.
2/ Includes $33,567 for adjustments in the estimated inflation through the construction period.
3/ Includes an allowance for estimated inflation through the construction period for Pools 1, 2, and 3.
4/ Increased $976 for timber wall and $2,972 addition of 6 dikes in Pool 1.
5/ Increased $10,310 for quantity overruns, $8,031 for modifications, $18,988 based on more detailed design of recreation facilities, $2,100 for shoal removal at Lock and Dam No. 1, $400 for storage barge, $1,026 for dewatering of Lock and Dam No. 1, $100 for emergency levee setback, $14 for actual cost, $573 additional hired labor, $1,278 additional Engineering and Design and $1,470 additional Supervision and Administration based on reanalysis of requirements; partialy offset by decreases of $5,287 based on contract awards, $6,026 adjustment in contingencies and $11,228 based on more detailed planning of construction and relocations.

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APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, LOCKS AND DAMS (NAVIGATION)
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
POOL 1	401,862,000	356,048,000	20,557,000	8,531,000	16,726,000
RELOCATIONS	249,000	0	211,000	0	38,000
DAMS	66,649,000	66,111,000	67,000	0	471,000
LOCKS	83,973,000	82,795,000	1,051,000	0	127,000
ROADS,RR,BRIDGES	2,684,000	849,000	1,727,000	0	108,000
CHANNELS & CANALS	190,724,000	161,938,000	15,914,000	6,014,000	6,858,000
LEVEES & FLOODWALLS	670,000	600,000	13,000	0	57,000
RECREATION FACILITY	10,613,000	0	0	1,969,000	8,644,000
CULTURAL RES PRESER	17,000	0	15,000	0	2,000
BLDGS,GRNDS,UTILS	1,887,000	1,853,000	17,000	17,000	0
PERM OPER EQUIP	681,000	231,000	425,000	25,000	0
ENGR & DESIGN	25,042,000	23,565,000	832,000	224,000	421,000
SUPV & ADMIN	18,673,000	18,106,000	285,000	282,000	0
POOL 2	332,565,000	166,905,000	50,755,000	44,150,000	70,755,000
RELOCATIONS	40,572,000	29,000	2,000,000	11,300,000	27,243,000
DAMS	31,009,000	20,195,000	6,854,000	2,966,000	994,000
LOCKS	53,540,000	42,361,000	5,518,000	4,070,000	1,591,000
ROADS,RR,BRIDGES	2,065,000	1,302,000	155,000	541,000	67,000
CHANNELS & CANALS	131,607,000	71,275,000	28,245,000	18,847,000	13,240,000
LEVEES & FLOODWALLS	1,159,000	498,000	149,000	326,000	186,000
RECREATION FACILITY	21,853,000	786,000	500,000	1,268,000	19,299,000
CULTURAL RES PRESER	17,000	0	15,000	0	2,000
BLDGS,GRNDS,UTILS	1,707,000	411,000	589,000	569,000	138,000
PERM OPER EQUIP	287,000	2,000	122,000	163,000	0
ENGR & DESIGN	27,970,000	22,495,000	1,790,000	1,200,000	2,485,000
SUPV & ADMIN	20,779,000	7,551,000	4,818,000	2,900,000	5,510,000
POOL 3	346,494,000	61,684,000	6,806,000	6,773,000	271,231,000
DAMS	77,025,000	0	450,000	1,574,000	75,001,000

EFFECTIVE DATE 01 JAN 86

DIVN,LOWER MISSISSIPPI VALLEY REGION, ARK-WHITE-RED BASIN, LOWER RED
DIST,VICKSBURG DISTRICT

PROJECT, RRW MS RV TO SHREVE

4 FEB 1986

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APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, LOCKS AND DAMS (NAVIGATION)
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
LOCKS	84,165,000	0	676,000	2,360,000	81,129,000
ROADS,RR,BRIDGES	2,014,000	7,000	61,000	0	1,946,000
CHANNELS & CANALS	127,866,000	37,760,000	1,774,000	0	88,332,000
LEVEES & FLOODWALLS	299,000	0	285,000	0	14,000
RECREATION FACILITY	11,270,000	0	0	0	11,270,000
CULTURAL RES PRESER	17,000	0	0	0	17,000
BLDGS,GRNDS,UTILS	1,915,000	0	0	0	1,915,000
PERM OPER EQUIP	160,000	0	0	0	160,000
ENGR & DESIGN	27,610,000	21,046,000	3,200,000	2,489,000	875,000
SUPV & ADMIN	14,153,000	2,871,000	360,000	350,000	10,572,000
POOL 4	304,274,000	20,360,000	1,900,000	2,390,000	279,624,000
DAMS	57,210,000	0	0	0	57,210,000
LOCKS	60,785,000	0	0	0	60,785,000
ROADS,RR,BRIDGES	518,000	69,000	0	0	449,000
CHANNELS & CANALS	117,367,000	7,537,000	0	0	109,830,000
LEVEES & FLOODWALLS	580,000	0	0	0	580,000
RECREATION FACILITY	20,800,000	0	0	0	20,800,000
CULTURAL RES PRESER	17,000	0	0	0	17,000
BLDGS,GRNDS,UTILS	2,205,000	0	0	0	2,205,000
PERM OPER EQUIP	395,000	0	0	0	395,000
ENGR & DESIGN	26,810,000	11,828,000	1,775,000	2,230,000	10,977,000
SUPV & ADMIN	17,587,000	926,000	125,000	160,000	16,376,000
POOL 5	242,102,000	9,768,000	1,600,000	540,000	230,194,000
DAMS	55,890,000	0	0	0	55,890,000
LOCKS	56,975,000	0	0	0	56,975,000
ROADS,RR,BRIDGES	875,000	0	0	0	875,000
CHANNELS & CANALS	74,479,000	1,902,000	0	0	72,577,000
LEVEES & FLOODWALLS	365,000	0	0	0	365,000
RECREATION FACILITY	15,275,000	0	0	0	15,275,000
CULTURAL RES PRESER	17,000	0	0	0	17,000
BLDGS,GRNDS,UTILS	955,000	0	0	0	955,000

EFFECTIVE DATE 01 JAN 86

DIVN,LOWER MISSISSIPPI VALLEY REGION, ARK-WHITE-RED BASIN, LOWER RED
DIST,VICKSBURG DISTRICT

PROJECT, RRW MS RV TO SHREVE

920

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APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, LOCKS AND DAMS (NAVIGATION)
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
PERM OPER EQUIP	395,000	0	0	0	395,000
ENGR & DESIGN	23,850,000	7,489,000	1,500,000	500,000	14,361,000
SUPV & ADMIN	13,026,000	377,000	100,000	40,000	12,509,000
FED AND NON-FED					
TOTAL COST - SCHED	1,627,297,000	614,765,000	81,618,000	62,384,000	868,530,000
UNDELIVERED ORDERS	0	7,388,000	16,460,000	-23,848,000	0
TOTAL OBLIGATIONS	0	622,153,000	98,078,000	38,536,000	868,530,000
FEDERAL FUNDS					
TOTAL COST - SCHED	1,582,000,000	611,936,000	79,694,000	61,848,000	828,522,000
UNDELIVERED ORDERS	0	6,651,000	17,197,000	-23,848,000	0
TOTAL OBLIGATIONS	0	618,587,000	96,891,000	38,000,000	828,522,000
NON-FEDERAL FUNDS					
TOTAL COST - SCHED	45,297,000	2,829,000	1,924,000	536,000	40,008,000
UNDELIVERED ORDERS	0	737,000	-737,000	0	0
TOTAL OBLIGATIONS	0	3,566,000	1,187,000	536,000	40,008,000
METHOD OF FINANCING					
FED AND NON-FED					
ALLOCATIONS		623,365,000	96,866,000		
UNOB CARRYOVER PFY			1,212,000		
TOTAL AVAIL FOR OBL		0	98,078,000		
APPROPRIATION REQUIRED				38,536,000	868,531,000

EFFECTIVE DATE
01 JAN 86

DIVN, LOWER MISSISSIPPI VALLEY REGION, ARK-WHITE-RED BASIN, LOWER RED
DIST, VICKSBURG DISTRICT

PROJECT, RRW MS RV TO SHREVE

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APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, LOCKS AND DAMS (NAVIGATION)
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FEDERAL FUNDS		1/			
ALLOCATIONS		619,778,000	95,700,000		
UNOB CARRYOVER PFY			1,191,000		
TOTAL AVAIL FOR OBL		0	96,891,000		
APPROPRIATION REQUIRED				38,000,000	828,522,000 3/
				FUTURE FEDERAL REQUIREMENTS	
				FISCAL YEAR 1988	33,800,000
				FISCAL YEAR 1989	6,400,000
				FISCAL YEAR 1990	5,700,000
				FISCAL YEAR 1991	1,622,000
				REMAINING BALANCE	781,001,000
NON-FEDERAL FUNDS		2/			
CONTRIBUTIONS		3,587,000	1,166,000		
UNOB CARRYOVER PFY			21,000		
TOTAL AVAIL FOR OBL		0	1,187,000		
CONTRIBUTION REQUIRED				536,000	40,008,000
				FUTURE NON-FED REQUIREMENTS	
				FISCAL YEAR 1988	1,170,000
				FISCAL YEAR 1989	2,000,000
				FISCAL YEAR 1990	1,300,000
				FISCAL YEAR 1991	0
				REMAINING BALANCE	35,538,000

1/ REFLECTS $26,654,000 ALLOCATED UNDER THE OVERTON-RED RIVER WATERWAY, LOWER 31 MILES PROJECTS AND $21,653,000 ALLOCATED UNDER THE RED RIVER EMERGENCY BANK PROTECTION PROJECT FOR CONSTRUCTION WORK.
2/ REFLECTS $7,000 CONTRIBUTED UNDER THE RED RIVER EMERGENCY BANK PROTECTION PROJECT FOR CONSTRUCTION WORK.
3/ INCLUDES $777,843,000 UNSCHEDULED WORK.

EFFECTIVE DATE
01 JAN 86

DIVN, LOWER MISSISSIPPI VALLEY REGION, ARK-WHITE-RED BASIN, LOWER RED
DIST, VICKSBURG DISTRICT

PROJECT, RRW MS RV TO SHREVE

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APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, LOCKS AND DAMS (NAVIGATION)
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
NON-FEDERAL COSTS					
CASH CONTR		45,297,000	1,166,000		
OTHER COSTS		44,687,000			
LANDS & DAMAGES		36,181,000			
RELOCATIONS		8,506,000			
OTHER		0			

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EFFECTIVE DATE
01 JAN 86

DIVN,LOWER MISSISSIPPI VALLEY REGION, ARK-WHITE-RED
DIST,VICKSBURG DISTRICT BASIN, LOWER RED

PROJECT, RRW MS RV TO SHREVE

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APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Mississippi River Between the Ohio and Missouri Rivers (Regulating Works) (Continuing)

LOCATION: The project involves improvement of the Mississippi River from the mouth of the Ohio River to the mouth of the Missouri River at mile 195 above the mouth of the Ohio River.

AUTHORIZATION: River and Harbor Acts of 1910, 1927, and 1930.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 25.4 to 1 at 2.5 percent. Initial construction funds were provided in 1910. The benefit to cost ratio was initially computed in 1960 and the benefit to cost ratio at that time was 4.5 to 1. The benefit to cost ratio is based on the project functioning as an inseparable unit of the Ohio to Missouri segment of the Mississippi River.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost
Estimated Federal Cost	$181,000,000	
Estimated Non-Federal Cost	0	
Total Estimated Project Cost	$181,000,000	
Allocations to 30 September 1985	106,890,000	
Conference Allowance for FY 1986	3,700,000	
Allocations for FY 1986	3,700,000	
Allocations to Date	110,590,000	61
Allocation Requested for FY 1987	4,000,000	63
Scheduled Balance to Complete After FY 1987	66,410,000	
Unscheduled Balance to Complete After FY 1987	0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	74	March 2000

PHYSICAL DATA

Channel: 195 miles	
Ohio River to St. Louis	9 x 300 feet
St. Louis to Missouri River	9 x 200 feet

Division: Lower Mississippi Valley District: St. Louis Region: Upper Mississippi

Mississippi River Between the Ohio and Missouri Rivers (Regulating Works)

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JUSTIFICATION: The Mississippi River between the Ohio and Missouri Rivers is a major artery of the inland waterway system. Commerce in this reach has increased from 4,500,000 tons in 1945 to an estimated 93,600,000 tons in 1984. Commerce is expected to increase to 167,000,000 tons by the year 2020; therefore, it is essential that construction of project works be continued at a rate which will insure 9-foot channel depths for a year-round navigation season. The average annual benefits and designated redevelopment areas are as follows:

Benefits	Amount (1 October 1985)
Navigation	$259,217,000
Area Redevelopment	439,000
Total	$259,656,000

Redevelopment Areas (PL 89-136)

County and State	Title	Subsection
Alexander, Illinois	IV	(1)
Jersey, Illinois	IV	(8)
Madison, Illinois	IV	(8)
Perry, Illinois	IV	(8)
Pulaski, Illinois	IV	(1)
St. Clair, Illinois	IV	(8)
Union, Illinois	IV	(8)
City of St. Louis, Missouri	IV	(7) & (8)
St. Francois, Missouri	IV	(8)

FISCAL YEAR 1987: The requested amount of $4,000,000 will be applied as follows:

Initiate:	Revetment, Mile 184-167	$ 319,000
	Dikes, Mile 167-160	537,000
	Ft. Chartres Channel Realignment, Phase I Mi. 140-125	204,000
	Eliza Point Channel Realignment, Phase II Mi. 20-5	480,000
Initiate and Complete:	Dredging Mi. 132-129	158,000
Continue:	Lands and Damages	5,000

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Complete:	Revetment, Mile 195-184	549,000
	Red Rock Channel Realignment, Phase I Mile 103.1-91.7	320,000
	Dikes, Mile 57.2-40	396,000
	Engineering and Design	724,000
	Supervision and Administration	308,000
	Total	$4,000,000

The funds requested are required to reduce bank erosion and to improve the channel to obtain a dependable 9-foot navigation channel.

STATUS OF LOCAL COOPERATION: None required.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $181,000,000 is a decrease of $2,000,000 from the latest estimate ($183,000,000) submitted to Congress. This change includes increases of $410,000 based on contract awards, offset by decreases of $2,050,000 for adjustments in the estimated inflation allowance through the construction period and $360,000 due to actual cost of completed work.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 23 April 1976.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404 Evaluation Report signed by the District Engineer on 27 September 1976. In view of the 1980 Amendments to the Clean Water Act, the Section 404 Evaluation Report signed by the District Engineer on 27 September 1976 needed to be revised. The District Engineer signed the revised report on 31 December 1981.

OTHER INFORMATION: No detailed information available prior to July 1954. Planning was initiated prior to 1910; construction was initiated in 1910.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Lower Mississippi Valley
District: St. Louis

Project: Mississippi River Between the Ohio and Missouri Rivers (Regulating Works)

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	57,883 (Jul 1954) 1/		183,000 2/		181,000 2/ 4/
Reason for Change		(125,117) 2/		(- 2,000) 4/	
a. Price Escalation		65,890		- 2,050	
b. Design Changes		52,800		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		160		0	
e. Post-Contract Award and Other Estimating Adjustments		2,997 3/		50 5/	
f. Schedule Changes		0		0	
g. Sundry		3,260		0	
h. Real Estate		10		0	

1/ No detailed information was available prior to July 1954. Planning was initiated prior to 1910; construction was initiated in 1910.
2/ Includes an allowance for estimated inflation through the construction period.
3/ Includes increases of $8,488 due to reevaluation of work required to construct the authorized 9-foot channel and $765 in contract modifications due to increased stone; offset by decreases of $274 due to favorable bids and contract awards, $5,982 based on more detailed planning for construction.
4/ Includes a decrease of $2,050,000 for adjustment in the estimated inflation allowance through the construction period.
5/ Includes increases of $410,000 based on contract awards; offset by decreases of $360,000 due to actual cost of completed work.

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APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, CHANNELS - HARBORS NAVIGATION
RCS=DAEN=CWR=13

SUMMARY
CONSTRUCTION PROGRAM (PR-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
LANDS AND DAMAGES	113,000	95,000	5,000	5,000	8,000
CHANNELS AND CANALS	154,407,000	93,382,000	2,904,000	2,943,000	55,158,000
ENGINEERING & DESIGN	13,926,000	5,639,000	608,000	724,000	5,955,000
SUPERVISION & ADMIN	12,554,000	5,662,000	295,000	308,000	5,289,000
FEDERAL FUNDS					
TOTAL COST - SCHED	181,000,000	104,778,000	3,812,000	4,000,000	66,410,000
UNDELIVERED ORDERS	0	8,000	-8,000	0	0
TOTAL OBLIGATIONS	0	104,786,000	3,804,000	4,000,000	66,410,000

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EFFECTIVE DATE 01 JAN 86 | DIVN,LOWER MISSISSIPPI DIST,ST. LOUIS DISTRICT | VALL REGION, UPPER MISSISSIPPI BASIN, MISS KASKASKIA ST.L. | PROJECT,MISS R BTN OHIO-MO REG WORK

4 FEB 86

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APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, CHANNELS & HARBORS NAVIGATION
RCS-DAEN-CWR-13

SUMMARY
CONSTRUCTION PROGRAM (PR-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FEDERAL FUNDS					
ALLOCATIONS		104,890,000	3,700,000		
UNOB CARRYOVER PFY			104,000		
TOTAL AVAIL FOR OBL		0	3,804,000		
APPROPRIATION REQUIRED				4,000,000	46,410,000
				FUTURE FEDERAL REQUIREMENTS	
				FISCAL YEAR 1988	3,800,000
				FISCAL YEAR 1989	3,800,000
				FISCAL YEAR 1990	5,200,000
				FISCAL YEAR 1991	5,100,000
				REMAINING BALANCE	48,510,000

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EFFECTIVE DATE 01 JAN 86 | DIVN.LOWER MISSISSIPPI DIST.ST. LOUIS DISTRICT | VALL REGION. UPPER MISSISSIPPI BASIN. MISS KASKASKIA ST.L | PROJECT.MISS R BTN OHIO-MO REG WORK

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APPROPRIATION TITLE: Construction, General - Local Protection - (Flood Control)

PROJECT: Kaskaskia Island Drainage and Levee District, Illinois (Continuing)

LOCATION: The project is located in Randolph County, Illinois, on the west bank of the Mississippi River between miles 111 and 116 above the mouth of the Ohio River between the towns of Ste. Genevieve and St. Mary's, Missouri.

AUTHORIZATION: Flood Control Act of 1962.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 4.2 to 1 at 3 1/4 percent. The benefit to cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1980) was 1.01 to 1. The benefit to cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost
Estimated Federal Cost	$13,200,000	
Estimated Non-Federal Cost	2,100,000	
Cash Contribution 0		
Other $2,100,000		
Total Estimated Project Cost	$15,300,000	
Allocations to 30 September 1985	7,750,000	
Conference Allowance for FY 1986	2,900,000	
Allocation for FY 1986	1,000,000 1/	
Allocations to Date	8,750,000	66
Allocation Requested for FY 1987	2,300,000	84
Scheduled Balance to Complete after FY 1987	2,150,000	
Unscheduled Balance to Complete after FY 1987	0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	51	Sep 1988

PHYSICAL DATA

Levees and Floodwall: Raise and enlarge - 14.8 miles

1/ Reflects $1,900,000 reduction assigned as Savings and Slippage.

Division: Lower Mississippi Valley District: St. Louis Region: Upper Mississippi
Kaskaskia Island Drainage and Levee District, Illinois

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JUSTIFICATION: The project was authorized by the Flood Control Act of 28 June 1938 and completed in August 1942. Under this authority, 14.8 miles of levees were enlarged and raised to the approved 1935 grade. These levees presently afford only partial protection to 9,460 acres of agricultural land and the Village of Kaskaskia and Pujol against a flood stage of 38.5 feet on the Chester gage. About 90 percent of the area is under cultivation. Flooding occurs about once in every 7.3 years and its average duration is 26 days. The last major flood, that of 1973, overtopped the levee by 2.8 feet and flooded the entire area for a duration of approximately two months causing an estimated $3,030,000 damages. Had the proposed project been in operation at that time, the total flood damage experienced would have been prevented. The average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$ 759,000
Fish and Wildlife	6,000
Total	$ 765,000

There are no redevelopment areas within commuting distance of this project.

FISCAL YEAR 1987: The requested amount of $2,300,000 will be applied as follows:

Continue: Levees Item 3A, 3C, and 4	$ 2,170,000
Engineering and Design	16,000
Supervision and Administration	114,000
Total	$ 2,300,000

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The funds requested will permit the continuation of construction of Levees Item 3A, 3C and 4 which will provide flood protection to the project area.

NON-FEDERAL COST: Local interests are required to provide all lands easements, rights-of-way, and relocations necessary for construction and accomplish all relocations at an estimated cost as follows:

Lands and Damages	$ 1,650,000
Relocations	450,000
Total	$ 2,100,000

Local interests are also required to maintain and operate the project after completion at an estimated annual cost of $35,000.

STATUS OF LOCAL COOPERATION: Formal assurances from the Commissioners of the Kaskaskia Island Drainage and Levee District were accepted on behalf of the United States on 23 January 1980.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $13,200,000 is the same as the last estimate ($13,200,000) submitted to Congress.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Environmental Protection Agency on 28 April 1978.

The provisions of Section 404 of the Clean Water Act have been met with the submission of an Environmental Impact Statement Supplement, including a Section 404(b)(1) Evaluation to Congress on 26 July 1979, and Congress subsequently appropriated funds (25 September 1979, Energy and Water Development Appropriation Act, 1980, Public Law 96-69).

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1975 and for construction in FY 1980.

Kaskaskia Island Drainage and Levee District, Illinois

1 FEB 1986

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Lower Mississippi Valley
District: St. Louis

Project: Kaskaskia Island Drainage and Levee District, Illinois

Item	Estimates Presented to Congress ($1000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Changes (4)	Current (5)
Federal Cost (Price Level)	14,225 (Oct 1978)		13,200		13,200 1/
Reason for Change		(-1,025)		0	
a. Price Escalation		3,148		0	
b. Design Changes		270		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-contract Award and Other Estimating Adjustments		-4,443 2/		0	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		0	

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes decreases of $2,273 due to contract awards and actual cost of completed work and $2,370 due to reduced quantities and unit prices; offset by an increase of $200 in Engineering and Design and Supervision and Administration based on a reanalysis of requirements.

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APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, FLOOD CONTROL-LOCAL PROTECTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PH-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
LEVEES AND FLOODWALL	10,840,000	4,840,000	1,789,000	2,170,000	2,041,000
ENGINEERING & DESIGN	1,500,000	1,432,000	80,000	16,000	12,000
SUPERVISION & ADMIN	860,000	549,000	100,000	114,000	97,000
FEDERAL FUNDS					
TOTAL COST - SCHED	13,200,000	6,821,000	1,929,000	2,300,000	2,150,000
UNDELIVERED ORDERS	0	711,000	-711,000	0	0
TOTAL OBLIGATIONS	0	7,532,000	1,218,000	2,300,000	2,150,000

4 FEB 1986

EFFEC IVE DATE
DIVN,LOWER MISSISSIPPI VALLEY REGION, UPPER MISSISSIPPI
DIST,ST. LOUIS DISTRICT
PROJECT,KASKASKIA ISLAND LEVEE

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APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, FLOOD CONTROL-LOCAL PROTECTION
RCS-DAEN-CWB-15

SUMMARY
CONSTRUCTION PROGRAM (PR-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FEDERAL FUNDS					
ALLOCATIONS		7,750,000	1,000,000 1/		
UNOB CARRYOVER PFY			218,000		
TOTAL AVAIL FOR OBL		0	1,218,000		
APPROPRIATION REQUIRED				2,300,000	2,150,000
				FUTURE FEDERAL REQUIREMENTS	
				FISCAL YEAR 1988	2,150,000
				FISCAL YEAR 1989	0
				FISCAL YEAR 1990	0
				FISCAL YEAR 1991	0
				REMAINING BALANCE	0
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS	0	0			
OTHER COSTS					
LANDS & DAMAGES	1,650,000	1,650,000			
RELOCATIONS	450,000	350,000			100,000
OTHER	0	0			
TOTAL NON-FEDERAL COSTS	2,100,000	2,000,000			100,000
TOTAL PROJECT COSTS FEDERAL (CORPS) COSTS AND NON-FEDERAL COST	15,300,000	9,750,000	1,000,000	2,300,000	2,250,000

1/ Reflects $1,900,000 reduction assigned as Savings and Slippage.

EFFECTIVE DATE FY JAN 86 — DIVN,LOWER MISSISSIPPI DIST,ST. LOUIS DISTRICT — VALL REGION, UPPER MISSISSIPPI HARIS, MISS KASKASKIA ST L — PROJECT,KASKASKIA ISLAND D&LD

4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Mauvaise Terre Drainage & Levee District, Illinois (Continuing)

LOCATION: The project is located in Scott County, which includes the Village of Naples, Illinois, on the left bank of the Illinois River between river miles 63.5 and 67.0 above the mouth of the Illinois River.

AUTHORIZATION: Energy and Water Development Appropriation Act of 1985 (Public Law 98-360).

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is not applicable because the project is nearing completion. The benefit to cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 1.6 to 1. The benefit to cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost C of E
Estimated Federal Cost (Corps of Engineers)		$1,100,000	
Estimated Non-Federal Cost		230,000	
Cash Contribution	$ 0		
Other	230,000		
Total Estimated Project Cost		$1,330,000	
Allocations to 30 September 1985		600,000	
Conference Allowance for FY 1986		0	
Allocation for FY 1986		0	
Allocations to Date		600,000	55
Allocation Requested For FY 1987		500,000	100
Scheduled Balance to Complete after FY 1987		0	
Unscheduled Balance to Complete after FY 1987		0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	0	Sep 1987

PHYSICAL DATA

Levee: Raise and enlarge-approximately 2.5 miles
Closure Structure: Two railroad closure structures

Division: Lower Mississippi Valley District: St. Louis Region: Upper Mississippi
Mauvaise Terre Drainage & Levee District, Illinois

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JUSTIFICATION: The project area includes approximately 5,700 acres consisting primarily of agricultural lands. The area also includes the Village of Naples, Illinois. The Federal Emergency Management Administration has considered suspension of authorized flood insurance for the area because the levee does not provide protection to a 100 year recurrence interval flood event. The project will provide this level of protection. Average annual benefits, all flood control, amount to $109,000. There are no redevelopment areas within commuting distance of this project.

FISCAL YEAR 1987: The requested amount of $500,000 will be applied as follows:

Initiate and Complete: Closure Structures	$260,000
Complete: Levee Raise	121,000
Engineering and Design	47,000
Supervision and Administration	72,000
Total	$500,000

The funds requested are the minimum to complete the project.

NON-FEDERAL COST: Local interests are required to provide all lands, easements, rights-of-way, and relocations necessary for construction. The non-Federal costs are broken down as follows:

Lands and Damages	$225,000
Relocations	5,000
Total	$230,000

Local interests are also required to operate and maintain all work after completion presently estimated at $8,600 annually.

STATUS OF LOCAL COOPERATION: The local sponsor, the Village of Naples, signed a letter of intent dated 13 March 1985 which indicated willingness to comply with the terms of local cooperation including provisions of the Uniform Relocations and Real Property Acquisition Policy Act of 1970 (PL 91-646) and Section 221 of the Flood Control Act of 1970 (PL 91-611).

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $1,100,000 is an increase of $500,000 from the latest estimate ($600,000) submitted to Congress. This change includes increases of $300,000 due to more detailed design and $300,000 in Engineering and Design and Supervision and Administration based on a reanalysis of requirements. These increases were partially offset by a reduction of $100,000 for adjustments in the estimated inflation allowance through the construction period.

Mauvaise Terre Drainage & Levee District, Illinois

4 FEB 1985

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STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH THE CLEAN WATER ACT: An Environmental Impact Statement or a Findings of No Significant Impact Report will be completed by the third quarter of FY 1986.

The provisions of Section 404 of the Clean Water Act for the project is scheduled to be met by a Section 404(b)(1) Evaluation in the third quarter of FY 1986, a Public Notice will be issued in the third quarter of FY 1986, Water Quality Certification and other required permits will be obtained from the State of Illinois, and the District Engineer's signature on the Evaluation Report is scheduled for the third quarter of FY 1986.

OTHER INFORMATION: Funds to initiate construction were appropriated in FY 1985.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Lower Mississippi Valley
District: St. Louis

Project: Mauvaise Terre Drainage & Levee District, Illinois

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	600 (Oct 83)		600		1,100 1/
Reason for Change				(500)	
a. Price Escalation				-100 1/	
b. Design Changes				0	
c. Additional Function Added Under General Authorization				300 2/	
				0	
d. Authorized Modification				0	
e. Post-Contract Award and Other Estimating Adjustments				300 3/	
f. Schedule Changes				0	
g. Sundry				0	
h. Real Estate				0	

1/ Includes a decrease of $100 for adjustments in the estimated inflation allowance through the construction period.

2/ Includes increases of $300 due to more detailed design.

3/ Includes increase of $300 in Engineering and Design and Supervision and Administration based on a reanalysis of requirements.

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APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, FLOOD CONTROL LOCAL PROTECT
PCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
LEVEES AND FLOODWALL	722,000	0	10,000	712,000	0
ENGINEERING & DESIGN	290,000	143,000	100,000	47,000	0
SUPERVISION & ADMIN	88,000	6,000	10,000	72,000	0
FEDERAL FUNDS					
TOTAL COST - SCHED	1,100,000	149,000	120,000	831,000	0
UNDELIVERED ORDERS	0	71,000	-71,000	0	0
TOTAL OBLIGATIONS	0	220,000	49,000	831,000	0

EFFECTIVE DATE 01 JAN 86 — DIVN,LOWER MISSISSIPPI DIST,ST. LOUIS DISTRICT — VALL REGION, UPPER MISSISSIPPI BASIN, LOWER ILLINOIS — PROJECT,MAUVAISE TERRE DRLD ILLINOIS

4 FEB 1986

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APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, FLOOD CONTROL LOCAL PROTECT
RCS=DAEN=CWH=13

SUMMARY
CONSTRUCTION PROGRAM (PH=1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FEDERAL FUNDS					
ALLOCATIONS		800,000	0		
UNOB CARRYOVER PFY			380,000	331,000	
TOTAL AVAIL FOR OBL		0	380,000		
APPROPRIATION REQUIRED				500,000	0
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS	0	0			
OTHER COSTS					
LANDS & DAMAGES	225,000		138,000	87,000	
RELOCATIONS	5,000		5,000		
OTHER					
TOTAL NON-FEDERAL COSTS	230,000		143,000	87,000	
TOTAL PROJECT COSTS					
FEDERAL (CORPS) COSTS AND NON-FEDERAL COST	1,330,000	149,000	263,000	918,000	

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4 FEB 1986

EFFECTIVE DIST,LOWER MISSISSIPPI VALL REGION, UPPER MISSISSIPPI PROJECT,MAUVAISE TERRE DELD
DATE DIST,ST. LOUIS DISTRICT BASIN LO-ER ILLINOIS ILLINOIS

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APPROPRIATION TITLE: Construction, General - Flood Control - Local Protection

PROJECT: Pearl River, Slidell, St. Tammany Parish, LA (Continuing)

LOCATION: The project is located in the southeastern portion of the State of Louisiana and consists of the area bounded by the West Pearl River on the east, Interstate 10 on the west, and Lake Pontchartrain on the south.

AUTHORIZATION: Supplemental Appropriation Act, FY 1985 (PL 99-88)

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 1.5 to 1 at 8-1/8 percent. The benefit to cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 1.4 to 1. The benefit to cost ratio analysis is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Federal Cost		$17,742,000	
Estimated Non-Federal Cost		5,914,000	
Cash Contribution	$1,642,000		
Other	4,272,000		
Total Estimated Project Cost		$23,656,000	
Allocations to 30 September 1985		15,000	
Conference Allowance for FY 1986		1,470,000	
Potential Allocation for FY 1986		455,000 1/	1
Potential Allocation thru FY 1986		470,000	
Allocation Requested for FY 1987		750,000	7
Scheduled Balance to Complete after FY 1987		16,522,000	
Unscheduled Balance		0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	0	Aug 1993
Reach A	0	Jun 1991
Reach B	0	Aug 1993

PHYSICAL DATA

Levees and Floodwalls:
Levees:
- Reach A - 4.5 miles
- Reach B - 10.5 miles

Floodgates:
- Reach A - One 10- x 8-ft Type: Box
  8 small floodgates
- Reach B - Two 7- x 8-ft Type: Box
  6 small floodgates

Pumping Plants:
- Reach A - One 50-cfs
- Reach B - One 250-cfs
  One 15-cfs

1/ Reflects $1,055,000 reduction assigned as savings and slippage.

Division: Lower Mississippi Valley District: Vicksburg Region: Lower Mississippi

Pearl River, Slidell, St. Tammany Parish, LA

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JUSTIFICATION: The recommended plan of improvement will provide protection against a flood of the magnitude that would occur once in 200 years. This plan will protect 4,500 acres of existing urban area from flooding and approximately 1,558 residential and commercial structures at an estimated value of $77,000,000. Total average annual damages for existing and future development conditions are estimated at $1,000,000 and $3,000,000, respectively. The maximum flood of record was April 1983 with a duration of 3 to 4 days. The damages sustained at that time was approximately $5,500,000. The approximate damage at this time would be $5,700,000. The recommended project would prevent approximately 60 percent of these damages and would be environmentally acceptable. The average annual benefits, all flood control, are $3,072,000 based on 1 October 1985 prices. There are no designated redevelopment areas within commuting distance of this project.

FISCAL YEAR 1987: The requested amount of $750,000 will be applied as follows:

	Reach A	Reach B
Engineering and Design	$308,000	$410,000
Supervision and Administration	12,000	20,000
Reach Totals	$320,000	$430,000
TOTAL	$750,000	

The funds requested to continue engineering and design is the minimum required to achieve the scheduled project completion date.

NON-FEDERAL COSTS: Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests were required to provide lands, easements, and rights-of-way, presently estimated at $3,955,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $317,000; pay approximately 7 percent of the costs allocated to flood control, presently estimated at $1,642,000; and bear all costs of operation, maintenance, and replacement of flood control facilities, presently estimated at $153,000 annually.

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STATUS OF LOCAL COOPERATION: The project sponsor, Gravity Drainage District No. 3, provided a letter of assurance, undated, but received by Vicksburg District 12 September 1985 reflecting their willingness to fulfill the items of local cooperation including the additional non-Federal cost-sharing and financial concepts agreed to between the Administration and the Senate Majority Leadership. The letter of assurance has been approved by Assistant Secretary of the Army (Civil Works) 31 December 1985. Negotiations regarding development of a cost-sharing agreement are currently underway. An agreement consistent with the Fiscal Year 1985 Supplemental Appropriation Act (PL 99-88) will be executed in FY 1988 prior to commencement of construction.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $17,742,000 is an increase of $1,563,000 over the latest estimate of $16,179,000. This change includes increases of $221,000 based on higher price levels to 1 October 1985, $2,984,000 for an estimated inflation allowance from 1 October 1985 through the construction period. These increases were partially offset by a decrease of $1,642,000 based on adjustments between Federal and non-Federal cost estimates consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: A final Environmental Impact Statement is scheduled to be filed with the Environmental Protection Agency in the first quarter FY 1987.

The provisions of Section 404 of the Clean Water Act are scheduled as follows:

Item	Preliminary Evaluation	Issuance of Public Notice	State Certification	Date of Signature by District Engineer
Slidell, LA	N/A	18 Mar 85	2nd Qtr 86	4th Qtr 86

OTHER INFORMATION: Funds to initiate construction were appropriated in FY 85.

The following language was contained in Supplemental Appropriation for FY 1985, Conference Report 99-236.

"The City of Slidell and other communities in St. Tammany Parish, Louisiana, have experienced three floods of record since 1979 resulting from high stages on the Pearl River. In April 1983, record stages occurred, devastating numerous businesses and as many as 1,000 homes causing over $100,000,000 in damages. Investigations being finalized by the Corps of Engineers indicated that a number of measures could reduce flood damage, including channel modifications, levees, drainage structures and bridge modifications.

Flood damage relief is critically needed in this--the fastest growing area of Louisiana. The Corps of Engineers is directed to expedite measures to reduce this flooding problem and within available funds is directed to undertake such structural and nonstructural measures as deemed feasible to prevent flood damage to communities in the Pearl River Basin, St. Tammany Parish, Louisiana. (Draft Report of the District Engineer, Vicksburg, dated March 1985.)"

The final report was forwarded to the Board of Engineers for Rivers and Harbors on 26 Sep 85.

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Pearl River, Slidell, St. Tammany Parish, LA

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Lower Mississippi Valley
District: Vicksburg

Project: Pearl River, Slidell, LA

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	$16,179 (Jul 1985)		$16,179		$17,742 1/
Reason for Change		0		($ 1,563) 1/	
a. Price Escalation				+3,205 1/	
b. Design Changes					
c. Additional Function Added Under General Authorization					
d. Authorization Modification					
e. Post-Contract Award and Other Estimating Adjustments					
f. Schedule Changes					
g. Sundry				-1,642 2/	
h. Real Estate					

1/ Includes $3,205,000 allowance for estimated inflation from October 1985 through the construction period.
2/ Decreased based on adjustments between Federal and non-Federal cost estimates consistent with the cost-sharing and financing concepts agreed to be the Administration and the Senate Majority Leadership.

4 FEB 1986

946

APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, FLOOD CONTROL-LOCAL PROTECTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
REACH A	7,659,000	0	173,000	820,000	6,666,000
LANDS & DAMAGES	1,695,000	0	0	500,000	1,195,000
RELOCATIONS	70,000	0	0	0	70,000
LEVEES & FLOODWALLS	3,986,000	0	0	0	3,986,000
PUMPING PLANTS	591,000	0	0	0	591,000
RECREATION FACILITY	131,000	0	0	0	131,000
ENGR & DESIGN	705,000	0	163,000	308,000	234,000
SUPV & ADMIN	481,000	0	10,000	12,000	459,000
REACH B	15,997,000	0	320,000	430,000	15,247,000
LANDS & DAMAGES	2,260,000	0	0	0	2,260,000
RELOCATIONS	247,000	0	0	0	247,000
LEVEES & FLOODWALLS	8,143,000	0	0	0	8,143,000
PUMPING PLANTS	2,774,000	0	0	0	2,774,000
RECREATION FACILITY	131,000	0	0	0	131,000
ENGR & DESIGN	1,464,000	0	300,000	410,000	754,000
SUPV & ADMIN	978,000	0	20,000	20,000	938,000
FED AND NON-FED					
TOTAL COST - SCHED	23,656,000	0	493,000	1,250,000	21,913,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	493,000	1,250,000	21,913,000
FEDERAL FUNDS					
TOTAL COST - SCHED	17,742,000	0	470,000	750,000	16,522,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLICATIONS	0	0	470,000	750,000	16,522,000
NON-FEDERAL FUNDS					
TOTAL COST - SCHED	5,914,000	0	23,000	500,000	5,391,000
UNDELIVERED ORDERS	0	0	0	0	0

EFFECTIVE DATE 01 JAN 86

DIVN,LOWER MISSISSIPPI VALLEY REGION, LOWER MISSISSIPPI
DIST,VICKSBURG DISTRICT BASIN, PEARL RIVER

PROJECT,PEARL RV,SLIDELL ST. TAMMANY

4 FEB 1986

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APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, FLOOD CONTROL-LOCAL PROTECTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
TOTAL OBLIGATIONS	0	0	23,000	500,000	5,391,000
METHOD OF FINANCING FED AND NON-FED					
ALLOCATIONS		0	478,000		
UNOB CARRYOVER PFY			15,000		
TOTAL AVAIL FOR OBL		0	493,000		
APPROPRIATION REQUIRED				1,250,000	21,913,000
FEDERAL FUNDS					
ALLOCATIONS		0	455,000 1/		
UNOB CARRYOVER PFY			15,000		
TOTAL AVAIL FOR OBL		0	470,000		
APPROPRIATION REQUIRED				730,000	16,522,000

1/ REFLECTS $1,055,000 REDUCTION IN SAVINGS AND SLIPPAGES.

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EFFECTIVE DATE
01 JAN 86

DIVN,LOWER MISSISSIPPI VALLEY REGION, LOWER MISSISSIPPI
DIST,VICKSBURG DISTRICT
BASIN, PEARL RIVER

PROJECT,PEARL RV,SLIDELL ST.
TAMMANY

4 FEB 86 948

APPROPRIATION TITLE
CONSTRUCTION GENERAL

CLASSIFICATION, FLOOD CONTROL-LOCAL PROTECTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
				FUTURE FEDERAL REQUIREMENTS	
				FISCAL YEAR 1988	800,000
				FISCAL YEAR 1989	1,900,000
				FISCAL YEAR 1990	3,100,000
				FISCAL YEAR 1991	3,642,000
				REMAINING BALANCE	7,080,000
NON-FEDERAL FUNDS					
CONTRIBUTIONS		0	23,000		
UNOB CARRYOVER PFY					
TOTAL AVAIL FOR OBL		0	23,000		
CONTRIBUTION REQUIRED				500,000	5,391,000
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS		1,642,000			
OTHER COSTS		4,272,000			
LANDS AND DAMAGES		3,955,000			
RELOCATIONS		317,000			
OTHER		0			
				FUTURE NON-FED REQUIREMENTS	
				FISCAL YEAR 1988	2,000,000
				FISCAL YEAR 1989	2,054,000
				FISCAL YEAR 1990	879,000
				FISCAL YEAR 1991	458,000
				REMAINING BALANCE	0

EFFECTIVE DATE 01 JAN 86

DIVN, LOWER MISSISSIPPI VALLEY REGION, LOWER MISSISSIPPI
DIST, VICKSBURG DISTRICT
BASIN, PEARL RIVER
1 FEB 1986

PROJECT, PEARL RV, SLIDELL ST. TAMMANY

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Grand Isle and Vicinity, Louisiana (Hurricane Protection) (Continuing)

LOCATION: The project is located along the Gulf of Mexico at Grand Isle, Louisiana, in south Jefferson Parish. The island is about 50 miles south of New Orleans and about 45 miles northwest of the mouth of the Mississippi River (Southwest Pass).

AUTHORIZATION: Authorized in 1976 under Section 201 of the Flood Control Act of 1965.

BENEFIT-TO-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because the project is nearing completion. The benefit-to-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1980) was 1.9 to 1. The benefit-to-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est Fed. Cost
Estimated Federal Cost		$10,343,000	
Estimated Non-Federal Cost		8,130,000	
Cash Contribution	$3,720,000		
Other	$4,410,000		
Total Estimated Project Cost		$18,473,000	
Allocations to 30 September 1985		8,343,000	81
Conference Allowance for FY 1986		0	
Allocation for FY 1986		1,000,000 1/	90
Allocations to Date		9,343,000	
Allocations Requested for FY 1987		1,000,000	
Scheduled Balance to Complete after FY 1987		0	
Unscheduled Balance to Complete after FY 1987		0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	95	June 1987

PHYSICAL DATA

Jetties: 2,600 linear feet
Sand Dune and Berm: 7.0 miles

JUSTIFICATION: Grand Isle is a low-lying barrier island extending approximately 7.5 miles along the gulf shore, generally in a northeast to southwest direction, and is less than a mile wide at its center. Natural elevations range from approximately 3 to 5 feet national geodetic vertical datum along the gulf shore to sea level marsh along the bay shore of the island. A manmade dune with a crest elevation of 7 feet national geodetic vertical datum was constructed along the gulf shore of the island to replace the natural sand dune destroyed by Hurricane Carmen in 1974. The dune was constructed with funds from the Federal Disaster Assistance Administration.

1/ Reflects a transfer of $1,000,000 to the project.

Division: Lower Mississippi Valley District: New Orleans Region: Lower Mississippi

Grand Isle is a base of operations for large offshore petroleum and sulphur industries and is a commercial fishing and sport fishing center. It is also an important area for residents of Louisiana and nearby states. Of the 2,340 acres on the island, there are 640 acres in residential development; 210 in industrial development; and 213 in commercial, government, and public establishments. This latter acreage includes 126 acres of state-owned beach designated as a state park.

As a result of Grand Isle's location and topography, improvements on the island are subject to damage from erosion along its gulf shore and passes and from the combined effects of winds and tides generated by hurricanes. Erosion damages to improvements on Grand Isle average approximately $557,000 annually and damages from hurricanes average approximately $3,790,000 annually.

The recommended plan of improvement would stabilize Grand Isle's gulf shore and provide protection from gulf waves generated by hurricanes of a magnitude that recur with an average frequency of once in every 50 years. The plan consists of a berm and vegetated dune extending the length of Grand Isle's gulf shore and a 2,600 foot jetty to stabilize the western end of the island at Caminada Pass. The project would provide no protection from still water flooding or from hurricane-driven bay waves. The average annual benefits and designated redevelopment areas are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$1,095,000
Prevention of Erosion	652,000
Recreation	605,000
Area Redevelopment	263,000
Total Annual Benefits	$2,615,000

Redevelopment Area (PL 89-136)		
Parish and State	Title	Subsection
Jefferson, Louisiana	IV	(8)

951

FISCAL YEAR 1987: The requested amount of $1,000,000 will be applied as follows:

Complete:	
Structural Reinforcement	$ 830,000
Survey and Layouts	22,000
Engineering and Design	26,000
Supervision and Administration	122,000
TOTAL	$1,000,000

The amount requested is the minimum required to complete construction.

Grand Isle and Vicinity, Louisiana

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NON-FEDERAL COST: Local interests are required to furnish all lands, easements, rights-of-way, including relocations; provide a cash contribution for the hurricane protection function in an amount sufficient to insure that the local investment in cash, equivalent work, and fair market value of lands and relocations are at least equal to 30 percent of all first costs allocated to that function of the project; and contribute in cash or equivalent work an amount sufficient to pay the non-Federal share of construction costs allocated to beach erosion control, less credit for completed work, the final amount to be determined at the time of project construction. These costs are broken down as follows:

Land and Damages		$4,410,000
Cash Contribution:		
Hurricane Protection		0
Beach Erosion		3,720,000
	TOTAL	$8,130,000

Local interests are also required to maintain the project and provide dune and jetty maintenance and post-hurricane replenishment as well as contribute toward periodic beach nourishment upon completion at an estimated annual cost of $626,000.

Prior to authorization of the project, local interests constructed a jetty along the western end of Grand Isle and placed sandfill on its landside. Local interests were given credit for $1,000,000 of this work.

STATUS OF LOCAL COOPERATION: Local interests have the responsibility of providing rights-of-way, 30 percent of hurricane protection costs, 75 percent of beach erosion costs, and operation and maintenance of the completed work. The Louisiana Legislature, by Act 833 of 1982, authorized the Office of Public Works of the Louisiana Department of Transportation and Development to provide the non-Federal assurances for the Grand Isle Hurricane Protection and Beach Erosion project. On 11 January 1983, Governor Treen authorized the Office of Public Works to execute the required assurances as a co-sponsor with the town of Grand Isle. The required assurances were executed on 16 March 1983, the construction rights-of-way were provided on 4 May 1983, and local interest provided a cash contribution of $2,100,000 in June 1983 and $70,000 in November 1985.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $10,343,000 is an increase of $943,000 over the latest estimate ($9,400,000) submitted to Congress in the FY 1983 budget request. This change includes increases of $70,000 due to higher price levels and $873,000 based on a reanalysis of remaining requirements to complete the project.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: A final Environmental Impact Statement was filed with the Council on Environmental Quality on 8 October 1976. An updated statement was prepared with the Phase I General Design Memorandum and submitted to the Environmental Protection Agency on 24 August 1979. A supplemental information report to the Environmental Impact Statement on the changed borrow areas in the Gulf was completed in June 1980. A supplemental Environmental Impact Statement addressing impacts associated with the east end borrow pit was initiated in 1985 and will be filed with the Council on Environmental Quality in the first quarter of FY 1987.

The provisions of Section 404 of the Clean Water Act were met by a Section 404(b)(1) Evaluation dated 26 December 1978, a Public Notice issued on 22 January 1979, a Certification from the State of Louisiana on 30 January 1979, and the District Engineer's signature on the report on 18 May 1979.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1978, and for construction in FY 1980. Initial construction funds were provided for the purchase of plants and maintenance of the nursery already established by local interests in order to have necessary vegetation cover to support the dune construction schedule.

The jetty on the western end of the island was constructed by the State of Louisiana and $1,000,000 was credited toward the State's share of the project's first cost.

The contract to construct the berm and vegetated dune was awarded 25 July 1983 to T. L. James & Company. Construction initiated 5 December 1983, and construction of the dune was completed in the summer of 1984. Dune vegetation was completed in late summer 1985.

In early 1985, five areas along Grand Isle were experiencing erosion. The 1985 hurricane season caused additional damage to the project. Louisiana was visited by 3 hurricanes, all of which impacted the project, which had already been rendered more vulnerable by the loss of beach which occurred in the winter. Furthermore, while the first hurricane (Danny) was not intense, the second (Elena) and the third (Juan) were stronger and, more importantly, erratic and dilatory in making land fall. Waves generated by Juan battered Grand Isle for at least three days. It is difficult to relate the severity of these events to the design storm, but it would appear reasonable to conclude that the combined impact of these storms well exceeded that which would be associated with the passage of the design hurricane.

While the project itself was severely damaged, it nevertheless was instrumental in preventing severe structural damage on Grand Isle. No structural damage was sustained in Hurricane Danny and Elena, and only minor structural damage in Juan. Based on updated survey report data, the structural damage on Grand Isle without the project would have been about $12 million from Juan alone. Considering the length of time Juan's effects impacted the island, this estimate may well be too low.

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The Corps is consulting with the Coastal Engineering Research Center (CERC) regarding project performance and the development of measures to "harden" the project against future damage. It appears that some enlargement of the terminal groin at the west end of the island and the jetty at the east end and would be effective in reducing erosion. In some areas, clay core dune construction and wave breaking devices may be desirable.

By letter dated 1 November 1985, the State of Louisiana, Office of Public Works (OPW), representing the local sponsors, filed for assistance in restoring the project under Public Law 84-99.

Maintenance of the project is the responsibility of the local assurer. The local assurer will receive Federal aid for repairing erosion and other damage to the project for a period of 15 years. The average annual Federal maintenance cost identified in the Act of Assurances is $44,000; however, this is not a fixed amount. Periodic nourishment to repair erosion will not necessarily be conducted every year, but as needed, with an estimated frequency of once in eight years on the average. It is estimated that the Federal share of the maintenance cost will be 25 percent for the 15-year period.

The sand dune was constructed utilizing an offshore borrow pit. The maintenance of the project over its 50 year life, however, could most economically be accomplished by use of a borrow pit on the east end of the island. The environmental community has reservations about the environmental acceptability of that pit. The Governor of Louisiana, in a letter dated 30 October 1984, requested that an Environmental Impact Statement be prepared addressing the environmental impacts associated with the east end proposal and other alternatives. Preparation of the Environmental Impact Statement was initiated in 1985, and will be filed with the Council on Environmental Quality in the first quarter of FY 1987.

4 FEB '88 954

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Lower Mississippi Valley
District: New Orleans

Project: Grand Isle and Vicinity, Louisiana

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline	Cumulative Changes	Last	Incremental Change	Current
Federal Cost (Price Level)	7,450 (October 1976)		9,400 2/		10,343 3/ (October 1985)
Reason for Change		(1,950) 2/		(943)	
a. Price Escalation		3,500		70	
b. Design Changes		85			
c. Additional Function Added Under General Authorization					
d. Authorized Modification					
e. Post-Contract Award and Other Estimating Adjustments		-1,635 1/		873 4/	
f. Schedule Changes					
g. Sundry					
h. Real Estate					

1/ Decreases due to reevaluation of preconstruction planning, more detailed planning of construction and a reevaluation of Engineering and Design requirements.
2/ Includes an allowance for estimated inflation through the construction period.
3/ Excludes an allowance for estimated inflation through the construction period.
4/ Increase due to remaining requirements to complete the project.

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4 FEB 1986

APPROPRIATION TITLE
CONSTRUCTION,GENERAL

CLASSIFICATION, FLOOD CONTROL,LOCAL PROTECTION
RCS-DAEN-CUB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
LANDS & DAMAGES	4,410,000	4,410,000	0	0	0
BREAKWATERS&SEAWALLS	1,000,000	1,000,000	0	0	0
BEACH REPLENISHMENT	10,947,000	8,742,000	1,103,000	1,102,000	0
ENGR & DESIGN	1,650,000	1,334,000	250,000	25,000	0
SUPERVISION & ADMIN	466,000	294,000	50,000	122,000	0
FED AND NON-FED					
TOTAL COST - SCHED	18,473,000	15,780,000	1,443,000	1,250,000	0
UNDELIVERED ORDERS	0	72,000	-72,000	0	0
TOTAL OBLIGATIONS	0	15,852,000	1,371,000	1,250,000	0
FEDERAL FUNDS					
TOTAL COST - SCHED	10,343,000	8,271,000	1,072,000	1,000,000	0
UNDELIVERED ORDERS	0	72,000	-72,000	0	0
TOTAL OBLIGATIONS	0	8,343,000	1,000,000	1,000,000	0
NON-FEDERAL FUNDS					
TOTAL COST - SCHED	8,130,000	7,509,000	371,000	250,000	0
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	250,000	7,509,000	371,000	250,000	0

EFFECTIVE DATE 01 JAN 86

DIVN,LOWER MISSISSIPPI VALL REGION, LOWER MISSISSIPPI
DIST,NEW ORLEANS DISTRICT BASIN, COASTAL LOUISIANA

PROJECT,GRAND ISLE & VIC.,LA

4 FEB 1986 956

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APPROPRIATION TITLE
CONSTRUCTION,GENERAL

CLASSIFICATION, FLOOD CONTROL,LOCAL PROTECTION
RCS-DAEN-CWB-15

SUMMARY
CONSTRUCTION PROGRAM (FB-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FED AND NON-FED					
ALLOCATIONS		15,852,000	1,371,000	1,250,000	
UNOB CARRYOVER PFY					
TOTAL AVAIL FOR OBL		0	0		
APPROPRIATION REQUIRED				0	0
FEDERAL FUNDS					
ALLOCATIONS		8,343,000	1,000,000(1)	1,000,000	
UNOB CARRYOVER PFY					
TOTAL AVAIL FOR OBL		0	0		
APPROPRIATION REQUIRED				0	0
NON-FEDERAL FUNDS					
CONTRIBUTIONS		7,509,000	371,000	250,000	
UNOB CARRYOVER PFY					
TOTAL AVAIL FOR OBL		0	0		
CONTRIBUTION REQUIRED				0	0
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS	3,729,000	3,099,000	371,000	250,000	0
OTHER COSTS					
LANDS & DAMAGES	4,410,000	4,410,000	0	0	0
TOTAL NON-FED COSTS	8,139,000	7,509,000	371,000	250,000	0
TOTAL FED(CORPS) & N/F	18,473,000	15,780,000	1,443,000	1,250,000	0

(1) REFLECTS $1,000,000 TRANSFER TO THE PROJECT.

EFFECTIVE DATE 01 JAN 88

DIVN,LOWER MISSISSIPPI DIST,NEW ORLEANS DISTRICT

WALL REGION, LOWER MISSISSIPPI BASIN, COASTAL LOUISIANA

PROJECT,GRAND ISLE & VIC.,LA

4 FEB 1986

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APPROPRIATION TITLE: Construction General - Local Protection (Flood Control) - Construction

PROJECT: Lake Pontchartrain, Louisiana, and Vicinity (Hurricane Protection) (Continuing)

LOCATION: The project is located in St. Charles, Jefferson, Orleans, St. Bernard, and St. Tammany Parishes in southeast Louisiana in the general vicinity of New Orleans adjacent to Lake Pontchartrain.

AUTHORIZATION: Flood Control Act of 1965 and Water Resources Development Act of 1974.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 9.3 to 1 at 3-1/8 percent. The benefit to cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1967) was 17.6 to 1. The benefit to cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Total Appropriation Requirement		$511,000,000	
Future Non-Federal Reimbursement	$ 28,000,000		
Estimated Federal Cost (Ultimate)		483,000,000	
Estimated Non-Federal Cost		207,000,000	
Reimbursement:			
Hurricane Protection	$ 28,000,000		
Cash Contribution	114,498,000		
Other	64,502,000		
Total Estimated Project Cost		$690,000,000	
Allocations to 30 September 1985		161,238,000	
Conference Allowance for FY 1986		25,000,000	
Allocation for FY 1986		19,870,000 1/	
Allocations to Date		181,108,000	36
Allocation Requested for FY 1987		16,000,000	39
Scheduled Balance to Complete after FY 1987		311,288,000	
Unscheduled Balance to Complete After FY 1987		2,604,000	

STATUS: (1 January 1986)

	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	68	Sep 2006 2/
New Orleans East Unit	83	Dec 1993
New Orleans West Unit	0	Sep 2006
Mandeville Unit	0	Indefinite 3/
Chalmette Unit	89	Sep 1991

2/ Excludes Mandeville Unit which has an indefinite completion date.

3/ Completion schedule indefinite until financial support is furnished by local interests.

1/ Reflects $3,800,000 reduction assigned as savings and slippage and $1,330,000 transfer from the project.

Division: Lower Mississippi Valley District: New Orleans Region: Lower Mississippi

Lake Pontchartrain, LA, and Vicinity (Hurricane Protection)

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PHYSICAL DATA

Levees: Average height: 16 feet
Length: 80 miles

Dam Closures: 2

Pumping Plant: 1

Drainage Structures: 9

Floodwalls: 17.9 miles

Floodgates: 2

Control Valve Structures: 3

JUSTIFICATION: The lowlands in the Lake Pontchartrain tidal basin are subject to tidal overflow. The Greater New Orleans Metropolitan Area which lies in this basin will continue its rapid economic development in the future years even though severe damages have resulted from several hurricanes in the past years. Hurricane damages result from surges entering Lake Pontchartrain from Lake Borgne through natural tidal passes at the Rigolets and Chef Menteur Pass and the Inner Harbor Navigation Canal. The surges are intensified by local wind effects and the combination of waves and surges causing overtopping of the protective works along the shores of Lake Pontchartrain. The eastern portion of the area is also subject to flooding by surges and waves that move directly from Lake Borgne and overtop the existing inadequate protective system seaward of the developed land areas. As a result, residences and industrial and commercial establishments suffer damage, business activities are disrupted, lives are endangered, and hazards to health are created. Hurricanes much more severe than any of record are possible. In the event of the occurrence of such a severe hurricane, catastrophic property damage and loss of human life would be experienced. Local interests have requested protection against these threats to life and property. Hurricane Betsy, in September 1965, caused extensive damage and flooding of urban areas of the New Orleans area to depths of up to 10 feet. Hurricane Camille occurred in the project area in August 1969 and flooded areas along the Inner Harbor Navigation Canal. Extensive flooding and overtopping of levees would have occurred in the project area in September 1974 if Hurricane Carmen had continued on its predicted course. In 1985, Hurricane Juan caused extensive flooding in the St. Charles Parish area. The Lake Pontchartrain hurricane protection project will provide protection from similar occurences. However, flooding also occurred in St. John the Baptist Parish which will not be protected by the project.

The average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$210,306,000
Total Annual Benefits	$210,306,000

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FISCAL YEAR 1987: The requested amount of $16,000,000 will be applied as follows:

New Orleans East Unit		
Complete:		
New Orleans Lakefront Levee		
IHNC to London Avenue		$ 520,000
New Orleans Lakefront Levee		
London Avenue to West End		310,000
Citrus Lakefront Levee		
IHNC to Paris Road		1,540,000
New Orleans East Back Levee		
Sta. 770 to 1007		1,900,000
New Orleans East Lakefront Levee		
Paris Road to Southpoint (Levee)		4,860,000
Surveys and Layouts		90,000
Engineering and Design		2,000,000
Supervision and Administration		537,000
	Subtotal	$11,757,000
New Orleans West Unit		
Engineering and Design		1,400,000
Supervision and Administration		150,000
	Subtotal	$ 1,550,000
Chalmette Unit		
Complete:		
Station 278 to 355 (2nd Lift)		$ 1,450,000
Initiate and Complete:		
North of Florida Ave., Floodwall Capping		370,000
Station 9+80 and 65+00 (Final Enlgmt)		220,000
Pipeline Canals and Gap Closure (1st Enlgt)		180,000
Surveys and Layouts		60,000
Engineering and Design		213,000
Supervision and Administration		200,000
	Subtotal	$ 2,693,000
	Grand Total	$16,000,000

Construction of the New Orleans East Back Levee, New Orleans Lakefront Levee, Citrus Lakefront Levee, and New Orleans East Lakefront Levees will provide a higher degree of interim protection to the New Orleans East Unit. Construction of Stations 278 to 355 and 9+80 to 65+00, Floodwall Capping North of Florida Ave, and Pipeline Canals and Gap Closures will provide a higher degree of interim protection to the Chalmette Unit.

NON-FEDERAL COST: Local interests are to bear 30 percent of the first cost to include the fair market value of all lands, easements, and rights-of-way, including borrow and disposal areas, necessary for construction of the hurricane features and to accomplish all necessary alterations and relocations to roads, railroads, pipelines, cables, wharves, drainage structures, and other facilities made necessary by the construction works.

Lands and Damages	$ 41,954,000
Relocations	22,548,000
Cash Contributions:	
Based on 30 percent of total project	114,498,000
Reimbursement: Hurricane Protection	28,000,000
Total	$207,000,000

Local interests are required to operate and maintain all features of the project works. The annual cost to local interests for operation and maintenance is estimated at $1,153,000 including $63,000 for material replacements.

In addition, local interests, through the combined efforts of the State of Louisiana, local levee and drainage districts, and parish police juries, have spent an estimated $25,366,000 between 1930-1963, based on the best cost records available, to improve and maintain the hurricane protection system existing prior to project authorization. Available costs of record are tabulated below:

Combination of State of Louisiana and Lake Borgne Levee District and Chalmette Back Levee District on the Chalmette Back Levee Protection Systems	$ 4,410,000
Orleans Levee District Board	12,010,000
Port of New Orleans (levees along Industrial Canal)	924,000
Pontchartrain Levee District	5,022,000
Fourth Drainage District of Jefferson Parish	3,000,000
Total	$25,366,000

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A very severe hurricane, Betsy, occurred in the project area in September 1965, just prior to the authorization of the project in October 1965. Considerable damage was done to many of the existing levees, and local interests immediately instituted an accelerated rehabilitation program, with the view of restoring and strengthening existing protection prior to succeeding hurricane seasons. Only work performed by local interests after project authorization, which conforms to the project design criteria and alignment, is considered as work-in-kind in lieu of cash contribution.

STATUS OF LOCAL COOPERATION: Assurances are required for the two independently justified plans.

1. Chalmette Area Plan:

   a. Orleans Levee District: New agreements of assurances covering all local cooperation requirements and a deferred payment plan as authorized by Public Law 93-251 were executed on 30 March 1976. These assurances were accepted on behalf of the United States on 7 December 1977.

   b. St. Bernard Parish Police Jury and Lake Borgne Basin Levee District: New joint agreements of assurances covering all local cooperation requirements and a deferred payment plan as authorized by Public Law 93-251 were executed on 2 April 1976. These assurances were accepted on behalf of the United States on 7 December 1977.

2. High Level Plan:

   a. Orleans Levee District: For the Barrier Plan, new agreements of assurances covering all local cooperation requirements and a deferred payment plan as authorized by Public Law 93-251 were executed on 30 March 1976. These assurances were accepted on behalf of the United States on 7 December 1977. Amended assurances for the High Level Plan were executed by the local sponsor on 29 May 1985 and accepted by the United States on 21 June 1985.

   b. St. Tammany Parish: The Louisiana Office of Public Works executed an act of assurance dated 8 November 1976 agreeing to fulfill all local cooperation requirements for that portion of the project in St. Tammany Parish. These assurances were accepted on behalf of the United States on 7 December 1977. Amended assurances for the High Level Plan are required; however, due to failure of the local sponsor to agree to the items of local cooperation, this portion of the project has an indefinite completion date.

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c. Pontchartrain Levee District: New agreements of assurances covering all local cooperation requirements and a deferred payment plan as authorized by Public Law 93-251 were executed on 20 September 1976. On 8 November 1976, the Louisiana Office of Public Works agreed to lend financial assistance above $100,000 to the Pontchartrain Levee District for that portion of the Barrier Plan which is the responsibility of that levee district. These assurances were accepted on behalf of the United States on 7 December 1977. Amended assurances have been submitted and are under negotiation for the St. Charles Parish portion of the project.

d. Jefferson Levee District: As of 1 January 1979, the State of Louisiana formed the Jefferson Levee District and assigned to it responsibility for Jefferson Parish levees on the east bank of the Mississippi River. These levees were previously the responsibility of the Pontchartrain Levee District. Amended assurances have been submitted and are under negotiation for the Jefferson Parish portion of the project.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $511,000,000 is a decrease of $108,000,000 from the latest estimate ($619,000,000) submitted to Congress. This change includes decreases of $36,197,000 for adjustments in the estimated inflation allowance through the construction period; $75,503,000 based on more detailed planning of construction which includes $3,795,000 for Engineering and Design and $2,409,000 for Supervision and Adminstration; $3,004,000 for actual contract awards; $700,000 due to underruns in contract quantities; and $269,000 based on the actual cost of completed work. These decreases were offset by increases of $22,000 for contract modifications and $7,651,000 due to a reanalysis of Federal and non-Federal cost sharing requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 17 January 1975. By Court Order dated 30 December 1977, a revised Environmental Impact Statement was ordered. A draft revised Environmental Impact Statement for the High Level Plan and reevaluation report which documents the proposal to adopt that plan instead of the barrier plan was released to the public and filed with the Environmental Protection Agency on 16 December 1983. The final revised Environmental Impact Statement was filed with the Environmental Protection Agency on 7 December 1984.

The provisions of Section 404 of the Clean Water Act have been met by a Statement of Findings signed by the District Engineer on 20 August 1975 for the majority of the project. The provisions of Section 404 of the Clean Water Act for work after 1 October 1981 have been met for the Chalmette Unit by a Supplemental Section 404(b)(1) Evaluation Report signed by the District Engineer on 15 November 1982; for the New Orleans East Unit by a Supplemental Section 404(b)(1) Evaluation Report signed by the District Engineer on 18 November 1983, and for the New Orleans West/Mandeville Unit by a Supplemental Section 404(b)(1) Evaluation Report signed by the District Engineer on 18 November 1983. A Public Notice was issued for the High Level Plan on 21 March 1984 and certification from the State of Louisiana was received on 29 June 1984.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1966 and for construction in FY 1967.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Lower Mississippi Valley
District: New Orleans

Project: Lake Pontchartrain, Louisiana, and Vicinity (Hurricane Protection)

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	65,784 (Oct 1965)		619,000 2/		511,000 1/ 2/
Reason for Change:		(553,216) 2/		(-108,000) 1/	
a. Price Escalation		387,828		- 36,197	
b. Design Changes		61,743		-75,503	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		140,599			
e. Post-Contract Award and Other Estimating Adjustments		-38,923		3,700 3/	
f. Schedule Changes		0		0	
g. Sundry		1,969		0	
h. Real Estate		0		0	

1/ Includes a decrease of $36,197 for adjustments in the estimated inflation allowance through the construction period.
2/ Includes an allowance for estimated inflation through the construction period.
3/ Reflects decreases of $3,004 for actual contract awards, $700 due to underruns in contract quantities, and $269 based on the actual cost of completed work. These decreases were offset by increases of $22 for contract modifications and $7,651 due to a reanalysis of Federal and non-Federal cost-sharing requirements.

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APPROPRIATION TITLE
CONSTRUCTION, GENERAL

CLASSIFICATION, FLOOD CONTROL-LOCAL PROTECTION
ACS-DAEN-CUB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
BARRIER UNIT	18,583,000	18,583,000	0	0	0
LANDS & DAMAGES	735,000	735,000	0	0	0
CHANNELS & CANALS	765,000	765,000	0	0	0
LEVEES&FLOODWALLS	1,898,000	1,898,000	0	0	0
PERM OP EQUIP	4,000	4,000	0	0	0
ENGR & DESIGN	14,313,000	14,313,000	0	0	0
SUPERVISION & ADMIN	868,000	868,000	0	0	0
NEW ORL. EAST UNIT	315,736,000	144,286,000	26,294,000	13,327,000	131,829,000
LANDS & DAMAGES	30,127,000	28,094,000	0	0	2,033,000
RELOCATIONS	17,948,000	14,952,000	1,324,000	0	2,564,000
LEVEES&FLOODWALLS	189,694,000	72,237,000	18,291,000	10,790,000	88,466,000
PUMPING PLANTS	29,135,000	8,988,000	4,000,000	0	7,147,000
ENGR & DESIGN	36,070,000	15,483,000	2,000,000	2,000,000	16,587,000
SUPERVISION & ADMIN	21,770,000	5,512,000	769,000	537,000	14,952,000
NEW ORL. WEST UNIT	255,944,000	4,909,000	1,586,000	1,550,000	247,899,000
LANDS & DAMAGES	2,189,000	1,149,000	0	0	1,040,000
RELOCATIONS	670,000	0	0	0	670,000
LEVEES&FLOODWALLS	207,454,000	0	0	0	207,454,000
ENGR & DESIGN	25,000,000	3,490,000	1,436,000	1,400,000	18,665,000
SUPERVISION & ADMIN	20,640,000	270,000	150,000	150,000	20,070,000
MANDEVILLE UNIT	2,756,000	152,000	0	0	2,604,000
LEVEES&FLOODWALLS	2,281,000	0	0	0	2,281,000
ENGR & DESIGN	272,000	140,000	0	0	132,000
SUPERVISION & ADMIN	203,000	12,000	0	0	211,000
CHALMETTE UNIT	98,981,000	77,982,000	1,813,000	2,983,000	15,123,000

EFFECTIVE DATE 01 JAN 86

DIVN, LOWER MISSISSIPPI DIST, NEW ORLEANS DISTRICT

WRR REGION, LOWER MISSISSIPPI BASIN, COASTAL LOUISIANA

PROJECT, LK PONTCH & VIC HURR PROT

4 FEB 1986

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APPROPRIATION TITLE
CONSTRUCTION, GENERAL

CLASSIFICATION, FLOOD CONTROL-LOCAL PROTECTION
RCS-DAEN-CUB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
LANDS & DAMAGES	8,912,000	8,912,000	0	0	0
RELOCATIONS	3,938,000	3,938,000	0	0	0
LEVEES&FLOODWALLS	78,450,000	53,536,000	1,340,000	2,550,000	13,824,000
PERM OP EQUIP	21,000	21,000	0	0	0
ENGR & DESIGN	7,480,000	7,067,000	280,000	813,000	0
SUPERVISION & ADMIN	6,100,000	3,688,000	273,000	280,000	2,009,000
FED AND NON-FED					
TOTAL COST - SCHED	690,000,000	245,012,000	29,693,000	17,840,000	397,455,000
UNDELIVERED ORDERS	0	1,803,000	-1,803,000	0	0
TOTAL OBLIGATIONS	0	246,815,000	27,890,000	17,840,000	397,455,000
FEDERAL FUNDS					
TOTAL COST - SCHED	511,000,000	158,201,000	22,207,000	16,000,000	313,892,000
UNDELIVERED ORDERS	0	1,803,000	-1,803,000	0	0
TOTAL OBLIGATIONS	0	160,704,000	20,404,000	16,000,000	313,892,000
NON-FEDERAL FUNDS					
TOTAL COST - SCHED	179,000,000	86,111,000	7,486,000	1,840,000	83,563,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	86,111,000	7,486,000	1,840,000	83,563,000

EFFECTIVE DATE 01 JAN 86

DIVN, LOWER MISSISSIPPI DIST, NEW ORLEANS DISTRICT

UNIT REGION, LOWER MISSISSIPPI BASIN, COASTAL LOUISIANA

PROJECT, LE PONTCH & VIC HURR PROT

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APPROPRIATION TITLE
CONSTRUCTION,GENERAL

CLASSIFICATION, FLOOD CONTROL-LOCAL PROTECTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FED AND NON-FED					
ALLOCATIONS		247,349,000	27,356,000		
UNOB CARRYOVER PFV			534,000		
TOTAL AVAIL FOR OBL		0	27,890,000		
APPROPRIATION REQUIRED				17,840,000	897,455,000(2)
FEDERAL FUNDS					
ALLOCATIONS		161,238,000	19,870,000(1)		
UNOB CARRYOVER PFV			534,000		
TOTAL AVAIL FOR OBL		0	20,404,000		
APPROPRIATION REQUIRED				16,000,000	313,892,000
FUTURE FEDERAL REQUIREMENTS					
FISCAL YEAR 1988					21,000,000
FISCAL YEAR 1989					50,000,000
FISCAL YEAR 1990					65,000,000
FISCAL YEAR 1991					63,000,000
REMAINING BALANCE					114,892,000
NON-FEDERAL FUNDS					
CONTRIBUTIONS		86,111,000	7,486,000		
UNOB CARRYOVER PFV					
TOTAL AVAIL FOR OBL		0	7,486,000		
CONTRIBUTION REQUIRED				1,840,000	83,563,000
FUTURE NON-FED REQUIREMENTS					
FISCAL YEAR 1988					110,000
FISCAL YEAR 1989					1,770,000
FISCAL YEAR 1990					5,684,000
FISCAL YEAR 1991					534,000
REMAINING BALANCE					76,545,000

(1) REFLECTS $3,200.0 REDUCTION ASSIGNED AS SAVINGS AND SLIPPAGE AND $1,230.0 TRANSFER FROM THE PROJECT.

(2) INCLUDES $2,604.0 FOR UNSCHEDULED WORK.

EFFECTIVE DATE 01 JAN 86 — DIVN,LOWER MISSISSIPPI DIST,NEW ORLEANS DISTRICT — WALL REGION, LOWER MISSISSIPPI BASIN, COASTAL LOUISIANA — PROJECT,LK PONTCH & VIC HURR PROT

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APPROPRIATION TITLE
CONSTRUCTION, GENERAL

CLASSIFICATION, RCS-DAEM-CWB-13
FLOOD CONTROL - LOCAL PROTECTION

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS	114,498,000	29,240,000	6,162,000	1,840,000	77,256,000
OTHER COSTS					
LANDS & DAMAGES	41,954,000	38,881,000	0	0	3,073,000
RELOCATIONS	22,548,000	17,990,000	1,324,000	0	3,234,000
TOTAL NON-FED COSTS	179,000,000	86,111,000	7,486,000	1,840,000	83,563,000
TOTAL FED(CORPS) & N/F	690,000,000	245,012,000	29,693,000	17,840,000	397,455,000

EFFECTIVE DATE 01 JAN 86
DIVN, LOWER MISS. VALLEY
DIST, NEW ORLEANS DISTRICT
REGION, LOWER MISSISSIPPI
BASIN, COASTAL LOUISIANA
PROJECT, LK PONTCH & VIC HURR PROT

4 FEB 1986

APPROPRIATION TITLE: Construction General - Local Protection (Flood Control)

PROJECT: Larose to Golden Meadow, Louisiana (Hurricane Protection) (Continuing)

LOCATION: The project is located in Lafourche Parish, Louisiana, about 28 miles southwest of New Orleans and about 25 miles inland from the Gulf of Mexico along Bayou Lafourche, south of the Gulf Intracoastal Waterway extending from Larose to Golden Meadow, a distance of about 16 miles.

AUTHORIZATION: Flood Control Act of 1965.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 7.4 to 1 at 3-1/4 percent. The benefit to cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1972) was 1.4 to 1. The benefit to cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Federal Cost		$64,000,000	
Estimated Non-Federal Cost		27,400,000	
Cash Contribution	$13,860,000		
Other	13,540,000		
Total Estimated Project Cost		$91,400,000	
Allocations to 30 September 1985		37,967,000	
Conference Allowance for FY 1986		3,000,000	
Allocation for FY 1986		3,450,000 1/	
Allocations to Date		41,417,000	65
Allocation Requested for FY 1987		3,500,000	70
Scheduled Balance to Complete after FY 1987		19,083,000	
Unscheduled Balance to Complete after FY 1987		0	

STATUS: (1 January 1986)

	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	50	Apr 2000

1/ Reflects $330,000 transfer to the project, and $120,000 anticipated transfer to the project.

Division: Lower Mississippi Valley District: New Orleans Region: Lower Mississippi

4 FEB 1986 Larose to Golden Meadow, LA (Hurricane Protection)

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PHYSICAL DATA

Levees	Floodgates	Drainage Structures
Loop levee approximately 40 miles in length along both banks of Bayou Lafourche; enlargement of 3 miles of levees at Golden Meadow; eight miles of low interior levee to regulate intercepted drainage.	Two	Eight multibarreled culverts

JUSTIFICATION: The project area is of great economic importance to the State of Louisiana, and includes lands and improvements having an aggregate value of approximately $164,300,000 (1985 prices). In 1980, the population of the area was 20,000 and increasing steadily. While oil and gas production and commercial fisheries, along with related service industries, dominate the economy of the area, a wide spectrum of economic activity exists.

Situated within a region of high hurricane incidence (on the average, two hurricanes threaten the Louisiana coast every 3 years), the project area is highly vulnerable to overflow from the tidal surges which accompany hurricanes. Should a hurricane similar to that of 1915 move through the area, damages of approximately $7,800,000 (1985 prices) could be expected. Should a major hurricane approaching the standard project hurricane in intensity move through the area the entire project area would be submerged in the tidal surge and monetary damages would likely amount to $62,300,000 (1985 prices). This damage would include minor crop losses, but the bulk of the damage would consist of physical damage to residential, commercial, and industrial establishments.

The project will provide protection against flooding from hurricanes having a frequency of occurrence of up to once in 100 years. The average annual benefits and designated redevelopment areas are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$10,328,000
Area Redevelopment	782,000
Total Annual Benefits	$11,110,000

Redevelopment Areas (PL 89-136)		
Parish and State	Title	Subsection
Assumption, Louisiana	IV	(8)
Jefferson, Louisiana	IV	(8)
St. Charles, Louisiana	IV	(8)
St. James, Louisiana	IV	(8)
St. John the Baptist, Louisiana	IV	(8)

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FISCAL YEAR 1987: The requested amount of $3,500,000 will be applied as follows:

Continue:	
Section D South Levee, 1st Lift	$ 800,000
Section B South, A West, 2nd lift	985,000
Complete:	
Larose Floodwall	1,335,000
Surveys and Layouts	47,000
Engineering and Design	185,000
Supervision and Administration	148,000
Total	$3,500,000

The funds requested are the minimum necessary to meet the scheduled completion date. The funds requested will permit continuation of an orderly construction sequence of the first and second lifts of the loop levee which, when completed, will provide a high degree of interim protection.

NON-FEDERAL COST: Local interests are to bear 30 percent of the first cost to consist of the fair market value of all lands, easements, and rights-of-way, including borrow and disposal areas necessary for construction of the hurricane features, and to accomplish all necessary alterations and relocations made necessary by the construction work. The current estimate of project costs to be borne by local interests follows:

Lands and Damages	$ 3,685,000
Relocations	9,855,000
Cash Contribution	13,860,000
Total	$27,400,000

Local interests are required to operate and maintain the project at an estimated annual cost of $723,000 which includes $214,000 for replacements.

In addition, local interests, through the combined efforts of the Louisiana Office of Public Works and the Lafourche Parish Police Jury, have spent an estimated $500,000 between 1954 and 1956 for a protective system around the town of Golden Meadow, Louisiana, against tidal inundation and for the complementary interior drainage works.

STATUS OF LOCAL COOPERATION: Assurances covering all requirements of local cooperation were received from the South Lafourche Levee District and accepted on behalf of the United States on 29 August 1973. Local interests have requested and received funds from the State of Louisiana for rights-of-way acquisition and relocations required to support construction work.

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COMPARISON OF FEDERAL (CORPS OF ENGINEERS) COST ESTIMATE: The current Federal (Corps of Engineers) cost estimate of $64,000,000 is an increase of $3,000,000 over the latest estimate ($61,000,000) presented to Congress. This change includes increases of $3,863,000 based on more detailed planning of construction, $885,000 for contract modifications and $409,000 in Engineering and Design, and Supervision and Administration resulting from a recent analysis of requirements. These increases were partialy offset by decreases of $1,140,000 for adjustments in the estimated inflation allowance through the construction period, $937,000 due to favorable bids received, and $80,000 from savings on completed work.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 13 May 1974. A draft supplement to the Environmental Impact Statement covering the revised levee alignments, previously unidentified wetland impacts, and necessary mitigation was submitted to the Environmental Protection Agency on 29 June 1984, and the final supplement was filed with the Environmental Protection Agency on 20 February 1985.

A final mitigation report required by the Environmental Protection Agency as a result of revised levee alignments and wetland impacts was forwarded for preliminary LMVD review on 9 May 1985 and approval is expected in the second quarter of FY 1986.

The provisions of Section 404 of the Clean Water Act have been met by the Statement of Findings signed by the District Engineer on 20 December 1974 and 2 November 1976 which cover all sections of the project based on the currently approved levee alignments.

The provisions of Section 404 of the Clean Water Act have been met for the Larose and Golden Meadow Floodgates by a supplement 404(b)(1) Evaluation Report signed by the District Engineer on 10 March 1982. In accordance with the 24 December 1980 Environmental Protection Agency guidelines, a Public Notice and certification by the State of Louisiana were not required.

The provisions of Section 404 of the Clean Water Act for the revised levee alignments have been met by a supplemental Section 404(b)(1) Evaluation Report signed by the District Engineer on 18 November 1982, a Public Notice issued on 14 March 1983, and a certification issued by the State of Louisiana on 12 June 1983.

The provisions of Section 404 of the Clean Water Act for the mitigation plan have been met by a supplemental Section 404(b)(1) Evaluation Report signed by the District Engineer on 25 May 1985, a Public Notice issued on 11 September 1985, and certification from the State of Louisiana on 25 October 1985.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1967 and for construction in FY 1972.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Lower Mississippi Valley
District: New Orleans

Project: Larose to Golden Meadow, Louisiana (Hurricane Protection)

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	9,390 (July 1970)		61,000 2/		64,000 1/ 2/
Reason for Change		(51,610) 2/		(+3,000) 1/	
a. Price Escalation		30,367		-1140	
b. Design Changes		13,498			
c. Additional Function Added Under General Modification		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimating Adjustments		7,495		+4140 3/	
f. Schedule Changes		0		0	
g. Sundry		250		0	
h. Real Estate		0		0	

1/ Includes a decrease of $1,140 for adjustments in the estimated inflation allowance through the construction period.
2/ Includes an allowance for estimated inflation through the construction period.
3/ Includes increases of $3,863 based on more detailed planning of construction, $885 for contract modifications, and $409 for Engineering and Design and Supervision and Administration based on a reanalysis of requirements; and decreases of $937 due to favorable bids received, and $80 from savings on completed work.

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APPROPRIATION TITLE
CONSTRUCTION,GENERAL

CLASSIFICATION, FLOOD CONTROL-LOCAL PROTECTION
RCS-DAEN-CWB-15

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
LANDS & DAMAGES	3,685,000	2,640,000	255,000	255,000	536,000
RELOCATIONS	9,055,000	7,461,000	805,000	805,000	784,000
LEVEES&FLOODWALLS	66,385,000	34,569,000	4,185,000	3,167,000	24,464,000
ENGR & DESIGN	7,475,000	6,398,000	207,000	185,000	685,000
SUPERVISION & ADMIN	4,000,000	3,344,000	144,000	148,000	364,000
FED AND NON-FED					
TOTAL COST - SCHED	91,400,000	54,412,000	5,596,000	4,580,000	26,812,000
UNDELIVERED ORDERS	0	85,000	-85,000	0	0
TOTAL OBLIGATIONS	0	54,497,000	5,511,000	4,580,000	26,812,000
FEDERAL FUNDS					
TOTAL COST - SCHED	64,000,000	37,881,000	3,536,000	3,580,000	19,083,000
UNDELIVERED ORDERS	0	85,000	-85,000	0	0
TOTAL OBLIGATIONS	0	37,966,000	3,451,000	3,580,000	19,083,000
NON-FEDERAL FUNDS					
TOTAL COST - SCHED	27,400,000	16,531,000	2,060,000	1,000,000	7,729,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	16,531,000	2,060,000	1,000,000	7,729,000

EFFECTIVE DATE 01 JAN 86

DIVN,LOWER MISSISSIPPI DIST,NEW ORLEANS DISTRICT

UALL REGION, LOWER MISSISSIPPI BASIN, COASTAL LOUISIANA

PROJECT,LAROSE TO GOLDEN MEADOW

4 FEB 1986 974

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APPROPRIATION TITLE
CONSTRUCTION, GENERAL

CLASSIFICATION, FLOOD CONTROL-LOCAL PROTECTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (FB-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FED AND NON-FED					
ALLOCATIONS		54,498,000	5,510,000		
UNOB CARRYOVER PFY			1,000		
TOTAL AVAIL FOR OBL		0	5,511,000		
APPROPRIATION REQUIRED				4,580,000	26,812,000
FEDERAL FUNDS					
ALLOCATIONS		37,967,000	3,450,000(1)		
UNOB CARRYOVER PFY			1,000		
TOTAL AVAIL FOR OBL		0	3,451,000		
APPROPRIATION REQUIRED				3,590,000	19,983,000
FUTURE FEDERAL REQUIREMENTS					
FISCAL YEAR 1988					4,000,000
FISCAL YEAR 1989					2,500,000
FISCAL YEAR 1990					2,000,000
FISCAL YEAR 1991					1,700,000
REMAINING BALANCE					8,883,000
NON-FEDERAL FUNDS					
CONTRIBUTIONS		16,531,000	2,000,000		
UNOB CARRYOVER PFY					
TOTAL AVAIL FOR OBL		0	2,000,000		
CONTRIBUTION REQUIRED				1,000,000	7,729,000
FUTURE NON-FED REQUIREMENTS					
FISCAL YEAR 1988					1,300,000
FISCAL YEAR 1989					1,079,000
FISCAL YEAR 1990					850,000
FISCAL YEAR 1991					720,000
REMAINING BALANCE					3,779,000

(1) REFLECTS $330.0 TRANSFER TO THE PROJECT AND ANTICIPATED $180.0 TRANSFER TO THE PROJECT.

EFFECTIVE DATE 01 JAN 86

DIVN, LOWER MISSISSIPPI DIST, NEW ORLEANS DISTRICT

WALL REGION, LOWER MISSISSIPPI BASIN, COASTAL LOUISIANA

PROJECT, LAROSE TO GOLDEN MEADOW

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4 FEB 1986

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APPROPRIATION TITLE
CONSTRUCTION, GENERAL

CLASSIFICATION, RCS-DAEN-CUB-15 FLOOD CONTROL - LOCAL PROTECTION

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1986	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS	13,860,000	6,430	1,000,000	0	6,430,000
OTHER COSTS					
LANDS & DAMAGES	3,685,000	2,640,000	255,000	255,000	535,000
RELOCATIONS	9,855,000	7,461,000	805,000	825,000	764,000
TOTAL NON-FED COSTS	27,400,000	16,531,000	2,060,000	1,080,000	7,729,000
TOTAL FED(CORPS) & N/F	91,400,000	54,412,000	5,596,000	4,580,000	26,812,000

EFFECTIVE DATE 01 JAN 86 DIVN, LOWER MISS. VALLEY DIST, NEW ORLEANS DISTRICT REGION, BASIN, LOWER MISSISSIPPI COASTAL LOUISIANA PROJECT, LAROSE TO GOLDEN MEADOW,

4 FEB 1986 976

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: New Orleans to Venice, Louisiana (Hurricane Protection)(Continuing)

LOCATION: The project is located along the east bank of the Mississippi River from Phoenix, Louisiana, (approximately 28 miles southeast of New Orleans, Louisiana) and from City Price, Louisiana, on the west bank (approximately 42 miles southeast of New Orleans, Louisiana) to Venice, Louisiana.

AUTHORIZATION: Flood Control Act of 1962.

BENEFIT TO COST RATIO: The remaining benefit - remaining cost ratio is 2.7 to 1 at 2-7/8 percent. The benefit to cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1964) was 2.4 to 1. The benefit to cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est Fed. Cost
Estimated Federal Cost		$164,000,000	
Estimated Non-Federal Cost		70,000,000	
Cash Contribution	$57,550,000		
Other	12,450,000		
Total Estimated Project Cost		$234,000,000	
Allocations to 30 September 1985		53,389,000	
Conference Allowance for FY 1986		3,500,000	
Allocation for FY 1986		1,000,000 1/	
Allocations to Date		54,389,000	33
Allocation Requested for FY 1987		3,000,000	35
Scheduled Balance to Complete after FY 1987		106,611,000	
Unscheduled Balance to Complete after FY 1987		0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	32	September 2013
Reach "A" - City Price to Tropical Bend	0	September 2013
Reach "B1" - Tropical Bend to Fort Jackson	95	October 1989
Reach "B2" - Fort Jackson to Venice	80	September 1991
Reach "C" - Phoenix to Bohemia	80	September 1993
Barrier Levee Plan	0	September 1999

Each reach, when complete, will provide interim protection from flooding.

1/ Reflects $2,500,000 reduction assigned as savings and slippage.

Division: Lower Mississippi Valley District: New Orleans Region: Lower Mississippi

4 FEB 1986 New Orleans to Venice, LA (Hurricane Protection)

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PHYSICAL DATA

Reach	Levees and Floodwalls	Drainage Structure
"A" - City Price to Tropical Bend	Enlarge approximately 13 miles	Two 54" Flap-gated corrugated metal culvert(s).
"B-1" - Tropical Bend to Fort Jackson	Enlarge approximately 12 miles	Floodgate at Empire
"B-2" - Fort Jackson to Venice	Enlarge approximately 9 miles	None
"C" - Phoenix to Bohemia	Enlarge approximately 16 miles	Ten flap-gated culverts.
Barrier Levee Plan	Construction of 34 miles of levee on the Mississippi River east bank from Mile 10 to Mile 44 above Head of Passes. Enlargement of 10 miles of Mississippi River west bank levee from Mile 10 to Mile 20 above Head of Passes.	Flap-gated culvert(s). (Size and number not determined)

JUSTIFICATION: The project will provide protection from hurricane tidal overflow to a major part of the developed and inhabited area along the Mississippi River delta. Approximately seventy-five percent of the population and seventy percent of the improved lands within the delta are contained in the project area. Hurricanes in the past have caused overtopping of the existing protective works, resulting in extensive damage to structures, industries, other urban and rural developments, crops, and livestock. Evacuation of inhabitants has been required frequently. The most recent storm, Hurricane Camille, occurred on 17 August 1969. Severe damages were sustained in Reaches B-1 and B-2 (Empire to Venice), and somewhat lesser damages were sustained in Reach A (Port Sulphur to Empire). Estimated flood damage sustained in the project area due to hurricanes is as follows:

Year of Hurricane	Actual Damages Sustained	Damages at Present Value and Conditions of Development
September 1915	$ 2,325,000	$107,700,000
September 1956 (Flossy)	1,709,000	10,400,000
September 1957 (Esther)	1,180,000	7,400,000
September 1965 (Betsy)	45,500,000	207,100,000
August 1969 (Camille)	62,500,000	203,000,000

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Benefits credited to the project consist of reduction of flood damage from hurricane tidal overflow caused by overtopping of the existing back levees, land intensification, and area redevelopment. The average annual benefits and designated redevelopment areas are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$17,504,000
Mitigation	11,000
Total Annual Benefits	$17,515,000

FISCAL YEAR 1987: The requested amount of $3,000,000 will be applied as follows:

Reach B-1		Reach C	
Engineering and Design	14,000	Continue: Sta. 494-830, 3rd Lift	$ 116,000
Supervision and Administration	1,000	Engineering and Design	$ 100,000
Subtotal	$ 15,000	Supervision and Administration	150,000
Reach B-2		Subtotal	$ 366,000
Complete:			
Sta. 1 to 281, 1st Enlargement	$1,000,000	Barrier Plan	
Sta. 281 to 473, 1st Enlargement	400,000	Engineering and Design	500,000
		Supervision and Administration	100,000
Engineering and Design	114,000	Subtotal	$ 600,000
Supervision and Administration	105,000		
Subtotal	$2,019,000	Grand Total	$3,000,000

The funds requested will increase the degree of protection in Reaches B2 and C. The funds requested are the minimum necessary to meet the scheduled completion dates.

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NON-FEDERAL COST: Local interests are to bear 30 percent of the first cost including but not less than the fair market value of lands, easements, and rights-of-way, including borrow and disposal areas necessary for construction of the hurricane features and to accomplish all necessary alterations and relocations of roads, railroads, pipelines, cables, wharves, drainage structures, and other facilities made necessary by the construction works.

The current estimate of project costs to be borne by local interests follows:

Lands and Damages	$ 4,768,000
Relocations	7,682,000
Cash Contribution	57,550,000
Total	$70,000,000

Local interests are also required to operate and maintain the project upon completion at an estimated annual cost of $643,000 which includes $206,000 for replacements.

In addition, local interests, prior to project authorization, expended in excess of $3,761,000 between 1 April 1926 and 31 December 1959 in the Mississippi River delta area below New Orleans for levees and interior drainage facilities to provide protection against inundation from storm tides.

STATUS OF LOCAL COOPERATION: Assurances of local cooperation for Reaches A, B-1, B-2, and C furnished by the Plaquemines Parish Commission Council were accepted on behalf of the United States on 14 April 1965. Supplemental assurances covering provisions of the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, furnished by the Plaquemines Parish Commission Council were accepted on behalf of the United States on 20 June 1973. Local interests were requested to furnish separate assurances for the East Bank Barrier Levee on 10 June 1975, 23 February 1976, and again on 19 August 1983. By letter dated 5 February 1985, the local sponsor requested the Corps to defer further work on the design of Reach A and direct their efforts toward earliest possible construction of the East Bank Barrier Levee or a suitable alternative thereto. The local sponsor indicated willingness to provide the supplemental assurances of local cooperation for the Barrier Levee. By letter dated 11 March 1985 to the local sponsor, the Corps stated that design would proceed on the East Bank Barrier Levee.

Local interests have constructed the first and second lifts of Reach C. Based on more detailed planning of construction, a third and fourth lift is required to raise the existing levee to project grade. Credit for equivalent work in lieu of cash contribution is given upon evaluation of the construction.

Local interests made cash contributions of $1,288,000 in July 1982, $1,762,000 in December 1982 and $1,369,898 in December 1985 to maintain their proportionate share of the project costs.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $164,000,000 is a decrease of $2,100,000 from the latest estimate ($166,100,000) submitted to Congress. This change includes decreases of $2,320,000 for adjustments in the estimated inflation allowance through the construction period and $250,000 from savings on completed work. These decreases were partially offset by an increase of $470,000 in Engineering and Design based on a reanalysis of requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 24 January 1975; however, during subsequent review, it became apparent that the final EIS was deficient. A draft Environmental Impact Statement was submitted to the Environmental Protection Agency on 23 March 1984, and the final Environmental Impact Statement supplement with a Section 404 evaluation was filed with the Environmental Protection Agency on 12 April 1985. A draft Supplemental Environmental Impact Statement for work on the East Bank Barrier Levee is scheduled to be submitted to the Environmental Protection Agency in the third quarter of FY 1987 and the final in the first quarter of FY 1988.

For Reaches B-1 and B-2, the provisions of Section 404 of the Clean Water Act have been met by a Statement of Findings signed by the District Engineer on 7 February 1975. A supplemental Section 404(b)(1) Evaluation Report addressing factors included in the 24 December 1980 revised guidelines was signed by the District Engineer on 22 July 1982.

For Reach A, the provisions of Section 404 of the Clean Water Act have been met by a supplemental Section 404(b)(1) Evaluation Report signed by the District Engineer on 26 April 1984, a Public Notice issued on 19 March 1984, and a certification from the State of Louisiana on 19 March 1984.

For the East Bank Barrier Levee, the provisions of Section 404 of the Clean Water Act are scheduled to be met by a Section 404(b)(1) Evaluation to be signed by the District Commander in the third quarter of FY 1987, a Public Notice issued in the third quarter of FY 1987 and a certification from the State of Louisiana by the fourth quarter of FY 1987.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1963 and for construction in FY 1964.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Lower Mississippi Valley
District: New Orleans

Project: New Orleans to Venice, Louisiana (Hurricane Protection)

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	7,580 (July 1962)		166,100 1/		164,000 1/ 2/
Reason for Change		(158,520) 1/		(-2,100) 2/	
a. Price Escalation		81,085		-2,320	
b. Design Changes		66,968		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		9,030		0	
e. Post-Contract Award and Other Estimating Adjustments		1,437		220 3/	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		0	

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes a decrease of $2,320 for adjustments in the estimated inflation allowance through the construction period.
3/ Includes increase of $470 based on more detailed planning of construction offset by decrease of $250 from savings on completed work.

APPROPRIATION TITLE
CONSTRUCTION,GENERAL

CLASSIFICATION, HURRICANE PROTECTION
RCS-DAEN-CUB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
REACH A	94,854,000	2,455,000	1,035,000	0	91,364,000
LANDS & DAMAGES	1,250,000	0	0	0	1,250,000
RELOCATIONS	3,779,000	0	0	0	3,779,000
LEVEES&FLOODWALLS	72,834,000	0	1,035,000	0	71,799,000
ENGR & DESIGN	8,600,000	2,225,000	0	0	6,375,000
SUPERVISION & ADMIN	8,400,000	230,000	0	0	8,170,000
REACH B-1	37,162,000	30,848,000	676,000	15,000	5,623,000
LANDS & DAMAGES	618,000	618,000	0	0	0
RELOCATIONS	1,290,000	739,000	0	0	551,000
LEVEES&FLOODWALLS	29,449,000	24,412,000	556,000	0	4,481,000
ENGR & DESIGN	3,610,000	3,254,000	60,000	14,000	282,000
SUPERVISION & ADMIN	2,195,000	1,825,000	60,000	1,000	309,000
REACH B-2	36,435,000	26,300,000	1,161,000	2,025,000	6,949,000
LANDS & DAMAGES	500,000	365,000	0	0	225,000
RELOCATIONS	863,000	863,000	0	0	0
LEVEES&FLOODWALLS	28,387,000	22,663,000	810,000	1,866,000	2,948,000
ENGR & DESIGN	4,185,000	1,393,000	151,000	114,000	2,527,000
SUPERVISION & ADMIN	2,440,000	825,000	200,000	105,000	1,309,000
REACH C	25,908,000	13,307,000	763,000	1,450,000	10,378,000
LANDS & DAMAGES	525,000	459,000	66,000	0	0
RELOCATIONS	1,189,000	1,189,000	0	0	0
LEVEES&FLOODWALLS	21,984,000	11,077,000	499,000	1,200,000	9,227,000
ENGR & DESIGN	1,210,000	508,000	150,000	100,000	452,000
SUPERVISION & ADMIN	1,180,000	94,000	147,000	150,000	789,000
BARRIER PLAN	39,581,000	578,000	534,000	800,000	37,669,000

EFFECTIVE DATE
01 JAN 86

DIVN,LOWER MISSISSIPPI DIST,NEW ORLEANS DISTRICT

WALL REGION, LOWER MISSISSIPPI BASIN, COASTAL LOUISIANA

PROJECT, N.O. TO VENICE

4 FEB 1986

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APPROPRIATION TITLE
CONSTRUCTION,GENERAL

CLASSIFICATION, HURRICANE PROTECTION
MCS-BAEN-CUB-13

SUMMARY
CONSTRUCTION PROGRAM (FB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1986	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
LANDS & DAMAGES	1,796,000	0	0	800,000	1,596,000
RELOCATIONS	500,000	0	0	0	500,000
LEVEES&FLOODWALLS	38,930,000	0	0	0	38,930,000
ENGR & DESIGN	2,285,000	524,000	400,000	500,000	781,000
SUPERVISION & ADMIN	1,981,000	40,000	84,000	100,000	1,760,000
FED AND NON-FED					
TOTAL COST - SCHED	234,000,000	73,572,000	4,150,000	4,293,000	151,979,000
UNDELIVERED ORDERS	0	479,000	-479,000	0	0
TOTAL OBLIGATIONS	0	74,051,000	3,630,000	4,293,000	151,979,000
FEDERAL FUNDS					
TOTAL COST - SCHED	164,000,000	52,870,000	1,519,000	3,000,000	106,611,000
UNDELIVERED ORDERS	0	479,000	-479,000	0	0
TOTAL OBLIGATIONS	0	53,349,000	1,040,000	3,000,000	106,611,000
NON-FEDERAL FUNDS					
TOTAL COST - SCHED	70,000,000	20,702,000	2,640,000	1,293,000	45,363,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	20,702,000	2,640,000	1,293,000	45,363,000

EFFECTIVE DATE 01 JAN 86

DIVN,LOWER MISSISSIPPI DIST,NEW ORLEANS DISTRICT

WALL REGION, LOWER MISSISSIPPI BASIN, COASTAL LOUISIANA

PROJECT, N.O. TO VENICE

4 FEB 1986 984

APPROPRIATION TITLE
CONSTRUCTION,GENERAL

CLASSIFICATION, HURRICANE PROTECTION
RCS-DAEN-CUB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FED AND NON-FED					
ALLOCATIONS		74,001,000	3,640,000		
UNOB CARRYOVER PFY			40,000		
TOTAL AVAIL FOR OBL		0	3,680,000		
APPROPRIATION REQUIRED				4,290,000	151,979,000
FEDERAL FUNDS					
ALLOCATIONS		53,389,000	1,000,000(1)		
UNOB CARRYOVER PFY			40,000		
TOTAL AVAIL FOR OBL		0	1,040,000		
APPROPRIATION REQUIRED				3,000,000	106,611,000
				FUTURE FEDERAL REQUIREMENTS	
				FISCAL YEAR 1988	3,500,000
				FISCAL YEAR 1989	5,300,000
				FISCAL YEAR 1990	7,000,000
				FISCAL YEAR 1991	10,680,000
				REMAINING BALANCE	80,211,000
NON-FEDERAL FUNDS					
CONTRIBUTIONS		20,782,000	2,640,000		
UNOB CARRYOVER PFY					
TOTAL AVAIL FOR OBL		0	2,640,000		
CONTRIBUTION REQUIRED				1,290,000	45,363,000
				FUTURE NON-FED REQUIREMENTS	
				FISCAL YEAR 1988	1,500,000
				FISCAL YEAR 1989	2,275,000
				FISCAL YEAR 1990	3,000,000
				FISCAL YEAR 1991	4,350,000
				REMAINING BALANCE	34,342,000

(1) REFLECTS $2500.0 REDUCTION ASSIGNED AS SAVINGS AND SLIPPAGE.

EFFECTIVE DATE 01 JAN 86

DIVN,LOWER MISSISSIPPI DIST,NEW ORLEANS DISTRICT

WALL REGION, LOWER MISSISSIPPI BASIN, COASTAL LOUISIANA

PROJECT, M.O. TO VENICE

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4 FEB 1986

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APPROPRIATION TITLE
CONSTRUCTION, GENERAL

CLASSIFICATION, CONSTRUCTION
RCS-BAEN-CUB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS	57,550,000	16,499,000	2,574,000	1,090,000	37,387,000
OTHER COSTS					
LANDS & DAMAGES	4,768,000	1,432,000	66,000	200,000	3,070,000
RELOCATIONS	7,682,000	2,771,000	0	0	4,911,000
TOTAL NON-FED COSTS	70,000,000	20,702,000	2,640,000	1,290,000	45,368,000
TOTAL FED(CORPS) & N/F	234,000,000	73,572,000	4,159,000	4,290,000	151,979,000

EFFECTIVE DATE 01 JAN 86

DIVN, LOWER MISS. VALLEY
DIST, NEW ORLEANS DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, COASTAL LOUISIANA

PROJECT, NEW ORLEANS TO
VENICE, LA

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LOWER MISSISSIPPI VALLEY DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation.

a. Channels and Harbors

The program request of $93,503,000 provides for essential maintenance on 22 channel and harbor projects named in the list which follows. The work to be accomplished under this activity consists of maintenance of navigation channels and harbors and anchorages of coastal harbors and waterways by means of dredging, repair, and operation of navigation structures, all as authorized in the laws adopting river and harbor projects.

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
ARKANSAS				
Helena Harbor	365,900	366,000	410,000	Variation in dredging requirements.
Osceola Harbor	280,000	471,000	533,000	Variation in dredging requirements.
White River	1,446,000	1,936,000	1,850,000	Variation in dredging requirements.
ILLINOIS				
Mississippi River Between Ohio and Missouri Rivers	11,802,900	10,598,000	10,594,000	Variation in dredging requirements and dike and revetment repairs. Major structure repairs at Lock 27 in FY 85.
KENTUCKY				
Hickman Harbor	545,900	388,000	445,000	Variation in dredging requirements.

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LOWER MISSISSIPPI VALLEY DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation (Cont'd)

a. Channels and Harbors (Cont'd)

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
LOUISIANA				
Atchafalaya River, Bayous Chene, Boeuf and Black	579,000	7,179,000	11,940,000	Variation in dredging requirements.
Barataria Bay Waterway	676,700	2,993,000	722,000	Variation in dredging requirements.
Calcasieu River and Pass	7,635,300	4,219,000	8,395,000	Variation in dredging requirements.
Freshwater Bayou	1,179,300	1,291,000	1,425,000	Variation in dredging requirements.
Gulf Intracoastal Waterway	10,667,700	14,318,000	11,664,000	Variation in dredging requirements.
Houma Navigation Channel	1,145,800	1,713,000	1,620,000	Variation in dredging requirements.
Lake Providence Harbor	291,100	462,000	356,000	Variation in dredging requirements.
Madison Parish Port	0	376,000	227,000	Variation in dredging requirements.

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LOWER MISSISSIPPI VALLEY DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation (Cont'd)

a. Channels and Harbors (Cont'd)

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
LOUISIANA (Cont'd)				
Mississippi River, Baton Rouge to Gulf of Mexico	38,665,600	32,444,000	33,225,000	Variation in dredging requirements.
Mississippi River - Gulf Outlet	4,531,700	7,106,000	6,140,000	Variation in dredging requirements.
Mississippi River, Outlets at Venice	2,885,500	2,141,000	2,252,000	Variation in dredging requirements.

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LOWER MISSISSIPPI VALLEY DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

I. Navigation (Cont'd)

a. Channels and Harbors (Cont'd)

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
MISSISSIPPI				
Claiborne County Port	0	8,000	272,000	Variation in dredging requirements.
Mouth of Yazoo River	72,000	1,000	106,000	Variation in dredging requirements.
Rosedale Harbor	303,400	246,000	311,000	Variation in dredging requirements.
Yazoo River	0	66,000	3,000	Variation in snagging and clearing.
MISSOURI				
Caruthersville Harbor	257,900	280,000	410,000	Variation in dredging requirements.
TENNESSEE				
Wolf River Harbor	622,000	537,000	603,000	Variation in dredging requirements.
LOUISIANA				
Projects Periodically Maintained	213,000	1,546,000		Variation in dredging requirements.
TOTAL - CHANNELS AND HARBORS	84,166,700	90,685,000	93,503,000	

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LOWER MISSISSIPPI VALLEY DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation (Cont'd)

b. Locks and Dams

The program request of $20,305,000 provides for the operational requirements of eight canalized waterways including portions of the Illinois Waterway and Mississippi River projects within the Division boundaries. Requirements include: operation and ordinary maintenance of project facilities; labor, supplies, materials and parts for day-to-day functioning; and periodic maintenance, repairs, and replacements.

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
ARKANSAS				
Ouachita and Black Rivers, AR and LA	4,951,500	4,403,000	5,310,000	Variation in dredging requirements.
ILLINOIS				
Illinois Waterway (LMVD)	277,400	667,000	1,265,000	Variation in dredging requirements.
Mississippi River between Missouri River and Minneapolis, MN (LMVD)	9,471,500	10,133,000	8,978,000	Variation in dredging requirements. Major structure repairs and dike and revetment repairs in FY 85 & 86.
Kaskaskia River	1,356,400	1,490,000	1,314,000	Maintenance of tainter gate bulkheads in FY 86.

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LOWER MISSISSIPPI VALLEY DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation (Cont'd)

b. Locks and Dams (Cont'd)

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
LOUISIANA				
Bayou Teche	270,400	392,000	640,000	Major repair Keystone Lock, FY 87
Mermentau River	1,984,300	2,031,000	420,000	Variation in dredging requirements.
Red River Waterway, Mississippi River to Shreveport, LA	1,890,000	2,882,000	2,262,000	Variation in dredging requirements. Bank stabilization repairs in FY 86. First year of operation of John H. Overton Lock and Dam in FY 87.
MISSISSIPPI				
Pearl River	325,000	259,000	116,000	Installation of security fence on on three locks in FY 85. Project in caretaker status.
Total - Locks and Dams	20,526,500	22,257,000	20,305,000	
TOTAL NAVIGATION	104,693,200	112,942,000	113,808,000	

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LOWER MISSISSIPPI VALLEY DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control

a. Reservoirs

The program request of $10,795,000 for the operation and maintenance of 10 flood control reservoir projects provides the amount necessary for operational requirements. Annual requirements are for the necessary operation and ordinary maintenance of project facilities; labor, supplies, materials and parts required for day-to-day functioning of the projects; and contract law enforcement. The requested amount also includes application of special recreation use fees for recreation areas.

	OBLIGATIONS			
Project	Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
ILLINOIS				
Carlyle Lake	3,849,100	4,598,000	2,746,000	Shoreline revetment in FY 85 and FY 86.
Lake Shelbyville	4,010,900	4,057,000	3,856,000	
Rend Lake	3,281,900	2,649,000	2,690,000	Shoreline revetment in FY 85.

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LOWER MISSISSIPPI VALLEY DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Flood Control (Cont'd)

a. Reservoirs (Cont'd)

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
LOUISIANA				
Bayou Bodcau Reservoir	404,100	372,000	302,000	Variation in repairs to public use facilities.
Caddo Lake	176,200	142,000	86,000	Variation to repairs to public use facilities.
Wallace Lake	35,600	136,000	136,000	Variation in repairs to public use facilities.
MISSISSIPPI				
Arkabutla Lake	0	70,000	100,000	Variation in Special Recreation Use Fee.
Sardis Lake	900	71,000	111,000	Variation in Special Recreation Use Fee.

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LOWER MISSISSIPPI VALLEY DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs (Cont'd)

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
MISSOURI				
Meramec Park Lake	353,700	629,000	599,000	Increased level of closeout activities in FY 86 and FY 87.
Wappapello Lake	130,000	59,000	169,000	Variation in Special Recreation Use Fee.
Projects Periodically Maintained	40,200	142,000		Variation in Special Recreation Use Fee.
TOTAL RESERVOIRS	12,282,600	12,925,000	10,795,000	

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LOWER MISSISSIPPI VALLEY DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

b. Channel Improvements, Inspections and Miscellaneous Maintenance

The program request of $908,000 provides for inspection of completed works during the budget year.

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
Bayou Pierre	7,200	38,000	10,000	Willow control and drift removal in FY 86.
Insp of Completed Works	799,500	921,000	822,000	Variation in inspections.
Insp of Non-Federal Levees	30,300	64,000	76,000	Variation in inspections.
Total - Channel Improvements, Inspections & Miscellaneous Maintenance	837,000	1,023,000	908,000	
TOTAL - FLOOD CONTROL	13,119,600	13,948,000	11,703,000	

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LOWER MISSISSIPPI VALLEY DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

3. Multiple Purpose Power Projects

The program request of $ 12,042,000 for the operation and maintenance of 4 multiple purpose projects provides the amount necessary for operation requirements. Annual requirements are for the necessary operation and ordinary maintenance of project facilities, labor, supplies, materials and parts required for day-to-day functioning of the project; and contract law enforcement. The requested amount also includes application of special recreation use fees for recreation areas.

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
ARKANSAS				
Blakely Mt. Dam - Lake Ouachita	3,530,000	2,919,000	3,219,000	Repair to public use facility in FY 85 and FY 87.
DeGray Lake	2,861,000	2,374,000	2,757,000	Repair to public use facility in FY 85 and FY 87.
Narrows Dam-Lake Greeson	2,283,600	2,407,000	2,418,000	
MISSOURI				
Clarence Cannon Dam and Reservoir	3,256,500	4,040,000	3,648,000	Increased level of power plant operations and periodic dam inspection in FY 86.
TOTAL MULTIPLE PURPOSE POWER PROJECTS	11,931,100	11,740,000	12,042,000	

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LOWER MISSISSIPPI VALLEY DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

4. Protection of Navigation

The program request shown provides for accomplishing the work essential to the administration and enforcement of specific laws enacted for the protection of navigation, particularly Section 10, River and Harbor Act, 1899; Section 402 and 404 of the Clean Water Act; Section 103 of Marine Protection Research and Santuary Act of 1972 involving the issuance and review of permits for discharges into navigable waters and for the eradication of aquatic plant growth and project condition surveys.

	OBLIGATIONS			
Project	Actual FY 1985	Estimated FY 1986	Estimated FY 1987	Explanation of Major Changes
	$	$	$	
General Reg. Functions	4,796,300	4,906,000	4,627,000	
Removal of Aquatic Growth	1,201,900	1,323,000	1,388,000	
Project Condition Surveys	128,900	141,000	139,000	
TOTAL - PROTECTION OF NAVIGATION	6,127,100	6,370,000	6,154,000	
GRAND TOTAL - LOWER MISSISSIPPI VALLEY DIVISION	135,872,000	145,000,000	143,707,000	

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Justification of Estimates for Civil Functions Activities
Department of the Army, Corps of Engineers
Fiscal Year 1987

SUMMARY: Mississippi River Commission

FLOOD CONTROL, MISSISSIPPI RIVER AND TRIBUTARIES, AR, IL, KY, LA, MO, MS and TN

	FY 1986 Allocation $	FY 1987 Request $	Increase or Decrease $
General Investigations	7,605,000	7,062,000	-543,000
Surveys Including Phase I Stage of Advance Engineering and Design	(3,846,000)	(3,314,000)	(-532,000)
Continuation of Planning and Engineering Studies	(2,414,000)	(2,158,000)	(-256,000)
Advance Engineering & Design	(1,345,000)	(1,590,000)	(+245,000)
Construction	223,660,000	193,024,000	-30,636,000
Dam Safety Assurance	3,500,000	3,500,000	0
Maintenance	104,995,000	104,841,000	-154,000
Less Reduction for Savings and Slippage	-25,000,000	-10,427,000	+14,573,000
TOTAL (FEDERAL AND NON-FEDERAL)	314,760,000	298,000,000	-16,760,000
NON-FEDERAL FUNDS	0	0	0
FEDERAL BUDGET AMOUNT	314,760,000 1/	298,000,000	-16,760,000

1/ Does not reflect reductions required by the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177).

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APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO and TN, General Investigations, Fiscal Year 1987.

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

1. SURVEYS - New: None.

2. SURVEYS - Continuing:

a. Navigation Studies: None.

b. Flood Damage Prevention Studies: The amount of $2,344,000 is requested in FY 1987 for continuation of five studies and completion of two studies.

ARKANSAS

Boeuf-Tensas Basin, South Arkansas and North Louisiana	6,540,000	3,582,000	800,000	950,000	1,208,000

The Boeuf-Tensas Basin Study area, located in southeastern Arkansas and northeastern Louisiana, drains an area of about 9,000 square miles. Major streams in the basin include Boeuf River, Little River, Tensas River, Bayou LaFourche, Bayou Macon and Big and Colewa Creeks. Problems and needs to be investigated include urban and rural flood damage reduction, bank stabilization, water supply, water quality, recreation, fish and wildlife, and other measures for the protection and enhancement of the environment. Because of intense local opposition to the selected plan in the lower reaches of the river, the local sponsor was unwilling to meet the local cooperation requirement; therefore, the Boeuf River and Tributaries Interim was terminated. The increase in study cost estimate of $100,000 is for salary increases and $55,000 for additional work effort necessary to finalize the Boeuf River and Tributaries Interim Study. The reconnaissance report proposes investigation of a large number of problems and needs. Fiscal Year 1986 funds are being utilized to continue basin-wide studies in the Boeuf-Tensas Rivers Tributaries Area, Arkansas; Upper Tensas-Cocodrie Area, Madison Parish Lakes, Rawson, Gastis, and Hooter Creek, and Larto Lake to Jonesville Area in Louisiana; water supply needs in the Louisiana portion of the basin; and basin-wide bank stabilization needs. Funds requested for FY 1987 will be used to complete the Boeuf-Tensas Rivers Tributaries, Arkansas, and the Upper Tensas-Cocodrie Studies and to continue flood damage prevention and water quality investigations on Madison Parish Lakes, LA; Walnut-Roundaway, LA; Deer Creek, LA; Tensas River East Bank, Rawson, Gastis, and Hooter Creeks, LA; and Larto Lake to Jonesville Area, LA. The overall study report is scheduled for completion in September 1989.

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
KENTUCKY					
Bayou du Chien	995,000	542,000	210,000	243,000	0

The 215-square-mile drainage area being studied is located in southwest Kentucky and runs east to west from Water Valley, Kentucky, to Hickman, Kentucky, just north of the Tennessee-Kentucky state line. Several thousand acres of cropland and woodland are flooded annually because of the deteriorated existing channel. Losses of channel depths have resulted in increased flooding causing economic losses, hardwood-timber losses and depletion of fish and wildlife habitat in recent years. Flood control improvements under consideration include restoration or enlargement of existing channels, a system of floodwater retarding structures, leveed floodways, and various combinations of these measures. The study was initiated in FY 1971. An initial Public Meeting was held 25 February 1971. A Preliminary Evaluation Report was approved 17 April 1974. Detailed Plan of Survey was approved in December 1971 and revised in February 1974, and the Formulation Stage public meeting was held on 24 July 1975. The study was deferred in 1977 due to environmental problems on the Obion Creek Project which serves as an outlet for Bayou du Chien. These problems have been resolved. Feasibility studies were resumed in FY 1985. The increase in the study cost estimate of $60,000 includes $22,000 for unanticipated costs for rights-of-entry, to perform surveys and geotechnical investigations, $28,000 for more detailed land use analysis, and $10,000 for salary cost increases. Fiscal Year 1986 funds will be used to complete plan formulation studies, perform detailed engineering, economic, and environmental analyses, and continue public involvement. Funds requested for Fiscal Year 1987 will be used to complete detailed engineering, economic, and environmental analyses of alternative plans, hold a public meeting and coordinate draft and final reports. The study report is scheduled for completion in August 1987.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
LOUISIANA					
Atchafalaya Basin (Water & Land Resources)	6,551,000	6,160,000	221,000	170,000	0

The study is undertaken in response to a combination of resolutions for the Old River Control and Atchafalaya River Basin to investigate improvements to the Old River Control System and its operations, and resolutions for management and preservation of the water and related land resources of the Atchafalaya River Basin.

Local interests in Louisiana are intent on full development of all the resources of the basin, mineral, timber, agriculture, fish, wildlife and recreation, while at the same time, taking measures to reduce or to prevent further siltation and encroachment of population and industry, and to preserve nationally significant bottomland hardwoods, swamps, and related environmental resources. Investigations were to determine whether in the light of changed conditions, any modifications, extensions, or additions to the existing Old River control system or to its operations were warranted, and to develop a comprehensive plan for the management and preservation of the water and related land resources of the Atchafalaya River Basin. The decrease in the study cost estimate of $379,000 results from removal of the study efforts for backwater flooding in areas east and west of the floodway based on a determination that backwater flooding on these areas would be addressed in ongoing reevaluations of authorized improvement. The interim study report of the Mississippi River Commission that considered modifications to the Old River Control System and developed a multiple-purpose comprehensive plan for the Atchafalaya Floodway was completed in January 1982. On 28 February 1983, the Chief of Engineers approved for implementation certain modifications to previously authorized flood control features under his delegated authority. He also forwarded his report recommending Congressional approval of additional project features to the Office of the Assistant Secretary of the Army for Civil Works, who has not yet sent his report to the Congress. Fiscal Year 1986 funds are being used to finalize the evaluation of alternatives for managing the Atchafalaya Delta, and the plan formulation process by which the related and sometimes conflicting problems, needs and opportunities of the Atchafalaya area will be resolved. Funds requested for Fiscal Year 1987 will be used to hold public meetings to gather the public's response to the plan selected and to prepare and submit the final Feasibility Report/Environmental Impact Statement. The study report on a management plan for the Atchafalaya Delta is scheduled for completion in September 1987.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Larto Lake-Saline Lake Area	1,410,000	894,000	300,000	116,000	100,000

The study area includes portions of Catahoula, LaSalle, Rapides, and Avoyelles Parishes and is bounded on the north and east by the Black River, on the south by the Red River, and on the west by Highway 107. Major areas of concern for local interests are control of siltation in Saline and Larto Lakes, improvement of water quality and fish and wildlife habitat, and flood control.

The study will determine the feasibility of various methods of improving the area's water quality, fish and wildlife habitat, and flood control measures in the area. The increase in study cost, $170,000 over that last presented to Congress, is for salary increases. Fiscal Year 1986 funds are being used to continue flood analyses and designs, and water quality studies and to initiate preparation of a draft report. Funds requested for FY 1987 will be used to prepare and coordinate the draft report. The study report is scheduled for completion in March 1988.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
MISSISSIPPI					
Yazoo River Basin	8,880,000	7,729,000	360,000	500,000	291,000

The Yazoo River Basin comprises 13,400 square miles in the northwest portion of Mississippi. About 6,600 square miles are in the delta and the remaining 6,800 square miles are in the hills east of the delta. The basin consists of the Yazoo Headwater, Yazoo Backwater, and Big Sunflower River, including Steele Bayou areas. One of the primary problems in the basin is flooding of rural agricultural lands. Inadequate capacity of streams to carry local runoff results in overflow of adjacent areas and prolongs the duration of flooding. The flood problem in the flat delta area is increased by rapid runoff from the hill section. Flooding occurs more than twice annually within the basin with most flooding occurring during the land preparation and planting period (January-June). There were 2,670 square miles flooded in the Yazoo River Basin in 1973, and 4,113 square miles flooded in 1983. Fiscal Year 1986 funds are being used to continue multipurpose flood control and water supply studies, complete preliminary evaluations in the Yazoo River (Lower Tributaries) and McKinney Bayou areas, and continue the Yazoo Headwater Area and the Lake Operations and Outlet Channels Interim Studies. Funds requested for Fiscal Year 1987 will be used to complete the Yazoo Headwater Area and Lake Operations and Outlet Channels Interim Studies, evaluate remaining authorized unconstructed flood control works, continue analysis of multipurpose flood control and water supply alternatives, investigate bank caving problems, and initiate preparation of the overall study report. The increase in the study cost estimate of $20,000 is for salary increases. Interim reports are scheduled for October 1986 for Lake Operations and Outlet Channels, and January 1987 for the Yazoo Headwater Area. The overall study report is scheduled for completion in January 1989.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
TENNESSEE					
Reelfoot Lake	990,000	0	400,000	260,000	330,000

Reelfoot Lake is located in Lake and Obion Counties of northwest Tennessee. The Reelfoot Lake Basin extends 35 miles in a southerly direction between Hickman, Kentucky and the Obion River in Tennessee. The basin covers an area of 268 square miles with Reelfoot Lake covering 13,000 acres at normal elevation. Principal tributaries to the lake include Reelfoot Creek, Indian Creek, Bayou du Chien. Running Reelfoot Bayou, which empties into the Obion River is the outlet for Reelfoot Lake. The study will investigate the need for and the feasibility of improvements in the area in the interest of flood control, sedimentation control, water quality, water supply, fish and wildlife preservation and enhancement, recreation, regional development, and allied purposes. Fiscal Year 1986 funds are being used to initiate and complete the reconnaissance phase study at Federal expense including coordination with other agencies, development of recommendations concerning subsequent studies, estimates of feasibility study cost, and execution of a study cost-sharing contract with an appropriate non-Federal sponsor if detailed studies are warranted. Funds requested for Fiscal Year 1987 will be used to initiate feasibility studies including detailed economic, environmental and engineering studies, and continue public involvement and agency coordination activities. The estimated cost of the feasibility phase is $1,180,000, which is to be shared on a 50-50 basis by Federal and non-Federal interests. Up to one-half of the non-Federal share may be in-kind services. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$1,580,000
Reconnaissance Phase (Federal)	400,000
Feasibility Phase (Federal)	590,000
Feasibility Phase (Non-Federal)	590,000

The reconnaissance phase is scheduled for completion in June 1987. Expected date of a study cost-sharing contract is June 1987. The feasibility study report is scheduled for completion in November 1989.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Tiptonville	355,000	0	225,000	105,000	25,000

Tiptonville is located in Lake County in northwest Tennessee about 100 miles north of Memphis, Tennessee. The area is located in the flood plain of the Mississippi River and contains about 1,500 acres. The study will determine the need and justification of constructing a levee to reduce agricultural and residential flood damage from backwater of the Mississippi River by considering several levee alignments with appropriate interior drainage facilities. Fiscal Year 1986 funds are being used to initiate and complete the reconnaissance phase study at Federal expense, including coordination with other agencies, development of recommendations concerning subsequent studies, estimates of feasibility study cost, and execution of a study cost-sharing contract with an appropriate non-Federal sponsor if detailed studies are warranted. Funds requested for FY 1987 will be used to initiate feasibility studies, including detailed economic, environmental and engineering studies; continue public involvement and agency coordination activities; and prepare a draft report. The estimated cost of the feasibility phase is $255,000, which is to be shared on a 50-50 basis by Federal and non-Federal interests. Up to one-half of the non-Federal share may be in-kind services. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$480,000
Reconnaissance Phase (Federal)	225,000
Feasibility Phase (Federal)	130,000
Feasibility Phase (Non-Federal)	125,000

The reconnaissance phase is scheduled for completion in December 1986. Expected date of study cost-sharing contract is December 1986. The feasibility study report is scheduled for completion in April 1988.

Total - Flood Damage Prevention Studies	25,721,000	18,907,000	2,516,000	2,344,000	1,954,000

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

c. Shoreline Protection Studies: None.

d. Special Studies: None.

e. Comprehensive Studies: The amount of $700,000 is requested in FY 1987 for continuation of one study.

ARKANSAS

Eastern Arkansas Region (Comprehensive Study)	2,350,000	1,053,000	300,000	700,000	297,000

The study area is located in the alluvial valley of the Mississippi River and comprises approximately 13,400 square miles. The study area includes the drainage basins of the Bayou Meto, Lower White River, Cache River, Big Creek, L'Anguille River, Black River, Little Red River and the St. Francis River in Eastern Arkansas. The full spectrum of water resource-related problems and needs will be addressed. The value of agricultural production within the area is very high, and local support is strong for studies directed at solving the flood control and water supply problems of the region. Increasing pumpage for municipal, industrial and agricultural purposes is depleting the groundwater supply. The increase in the Federal study cost estimate of $100,000 is due to salary increases.

The feasibility phase was initiated in FY 1985. Fiscal Year 1986 funds are being used to continue the feasibility stage of the study, including engineering and design studies. Funds requested for FY 1987 will be used to continue detailed economic, environmental, engineering and design studies, and to formulate, screen and evaluate alternative plans of improvement. The estimated cost of the feasibility phase is $2,800,000. Up to one-half of the non-Federal share may be in-kind services. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$3,600,000
Reconnaissance Phase (Federal)	800,000
Feasibility Phase (Federal)	1,550,000
Feasibility Phase (Non-Federal)	1,250,000

The reconnaissance phase was completed in March 1985. The study cost-sharing contract was signed by the State of Arkansas on 26 July 1985. The feasibility study is scheduled for completion in March 1989.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

f. Collection and Study of Basic Data

Surveys, Gages, and Observations. The amount of $270,000 is requested for Fiscal Year 1987 for collection of essential basic data which are subsequently used in the planning and design of flood control projects. The data collected under this activity are for authorized projects or units thereof for which funds have not been appropriated. The data to be collected will consist of information on stream flow, rainfall, floods, and other items of related hydrologic nature.

3. Surveys - Continuation of Planning and Engineering Studies - New Start

a. Navigation Studies: None.

b. Flood Damage Prevention Studies: None.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

4. SURVEYS - Continuation of Planning and Engineering Studies

a. Navigation: None.

b. Flood Damage Prevention Studies: The amount of $2,158,000 is requested in Fiscal Year 1987 for continuation of three studies and completion of one study.

LOUISIANA					
Bushley Bayou Area	975,000	370,000	350,000	150,000	105,000

The Bushley Bayou area is located in east-central Louisiana about 35 miles northeast of Alexandria, Louisiana. The recommended plan includes levees, a pumping plant, and related flood control works that will provide flood protection to 34,900 acres of predominantly agricultural land including 759 homes, businesses, churches, and other development. The plan also includes environmental features compatible with the flood control plan. The Phase I report was approved by the Mississippi River Commission and submitted to the Chief of Engineers on 17 August 1978. The Chief of Engineers submitted the report to the Secretary of the Army on 6 May 1980. The local sponsor will prescribe and enforce flood plain regulations consistent with wise use of the remaining flood plain in the project area. The October 1985 estimated project first cost is $45,700,000. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way and required disposal areas presently designated at $6,270,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $2,606,000; pay 35 percent of the costs allocated to flood control, presently estimated at $10,010,350, and bear all costs of operation, maintenance and replacement of flood control facilities presently estimated at $227,000 annually; pay 33-1/3 percent of the separable and joint costs allocated to fish and wildlife enhancement, presently estimated at $351,650 and bear all costs of operation, maintenance and replacement of fish and wildlife facilities presently estimated at $130,000 annually (excluding $19,000 annually for fish and wildlife losses). Average annual benefits are $4,646,000 of which $4,571,000 are for flood damage reduction and $75,000 are from fish and wildlife facilities and mitigation lands. The benefit-to-cost ratio is 1.0 to 1 at 8 5/8 percent. The Fiscal Year 1986 funds are being used for planning and engineering effort on the Phase II General Design Memorandum. Funds requested for Fiscal Year 1987 will be used to continue planning and engineering effort on the Phase II General Design Memorandum. The Phase II General Design Memorandum is scheduled for completion in December 1989.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Mississippi and Louisiana Estuarine Areas	3,900,000	300,000	1,000,000	780,000	1,820,000

The Mississippi and Louisiana Estuarine Areas are located in southeastern Louisiana and southern Mississippi. In Louisiana, the area embraces a portion of the lower Mississippi River, Chandeleur Sound, Lakes Maurepas, Pontchartrain, and Borgne, and the marshes surrounding these lakes. In Mississippi, the Mississippi Sound and bordering wetlands are included. The recommended plan of improvement provides for a freshwater diversion control structure in a Mississippi River levee setback located in St. Charles Parish, about 33 miles upriver of New Orleans, Louisiana, inflow and outflow channels from the Mississippi River to Lake Pontchartrain to convey the design flows, a sedimentation trap, an access bridge, and six two-acre recreation sites located in Louisiana and Mississippi. The present estimated project cost is $57,900,000 of which $43,400,000 is Federal cost and $14,500,000 is non-Federal cost. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests will be required to provide lands, easements, rights-of-way and required disposal areas, presently estimated at $4,000,000, modify or relocate buildings, utilities, roads, and other facilities except railroad bridges, where necessary in the construction of the proposed project, presently estimated at $5,100,000, pay 25 percent of the cost of the project for fish and wildlife enhancement presently estimated at $14,500,000 and bear all costs of operation, maintenance, and replacement of the project, presently estimated at $820,000 annually. Average annual benefits are $7,310,000 for fish and wildlife enhancement. The benefit-cost ratio is 1.18 to 1 at 8-5/8 percent. Fiscal Year 1986 funds are being used to complete soil borings, soil testing and topographic surveys, and initiate engineering and design and salinity analysis studies. Funds requested for FY 1987 will be used to continue the engineering and design and salinity analysis studies. Continuation of Planning and Engineering is scheduled for completion in September 1989.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
MISSOURI					
St. Johns Bayou and New Madrid Floodway	2,800,000	1,480,000	564,000	428,000	328,000

The study area is located in southeast Missouri and includes all or portions of New Madrid, Scott and Mississippi Counties. The basins are adjacent to the Mississippi River, extending from the vicinity of Commerce to New Madrid, Missouri. The plan of improvement includes 136.0 miles of rural channel improvement, 7.7 miles of urban channel improvement, a 1,000-cubic-feet-per-second pumping station for the St. Johns Bayou area and a 1,500-cubic-feet-per-second pumping station for the New Madrid Floodway area. Fish and wildlife features consist of acquisition of 2,500 acres of land in the Tenmile Pond area, restrictive easements along 2,100 acres of construction right-of-way, ponding easements on 4,900 acres for waterfowl, and a fish pool weir. A 2.1-mile hiking/biking trail at Sikeston is also included. Local sponsors are required to develop a flood plain managment plan. The October 1985 estimated first cost is $111,100,000. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $15,510,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad birdges, where necessary in construction of the project, presently estimated at $22,290,000; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $29,000, and bear all costs of operation, maintenance and replacement of recreation facilities, presently estimated at $2,000 annually; pay 5 percent of the costs allocated to flood control, presently estimated at $5,115,000 and bear all costs of operation, maintenance and replacement of flood control facilities, presently estimated at $416,000 annually; and pay 33.3 percent of the separable and joint costs allocated to fish and wildlife enhancement, presently estimated at $2,871,000 and bear all costs of operation, maintenance and replacement of fish and wildlife facilities presently estimated at $23,000 annually. Average annual benefits are $11,343,000 of which $10,894,000 are for flood damage reduction, $38,000 for recreation, $77,000 for fish and wildlife, $334,000 for advanced replacements and betterments. The benefit to cost ratio is 1.5 to 1 at 8-5/8 percent. Fiscal Year 1986 funds are being used to initiate cultural resources survey, sump and stilling basin model testing and to complete the Phase II General Design Memorandum. Fiscal Year 1986 funds are being used to initiate cultural resources surveys and sump and stilling basin model testing and to complete the Phase II General Design Memorandum. Funds requested for Fiscal Year 1987 will be used to complete cultural resources surveys, and to initiate preparation of a pumping station feature design memorandum and a real estate design memorandum. Continuation of planning and engineering is scheduled for completion in September 1988.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
TENNESSEE					
Nonconnah Creek, Tennessee and Mississippi	1,300,000	0	500,000	800,000	0

The Nonconnah Creek Basin comprises a 183-square-mile drainage area in southwest Tennessee and northwest Mississippi. The basin is about 32 miles long and has a maximum width of approximately 10 miles. Major tributaries are Johns Creek and Days Creek. Flood protection is needed for 7,800 homes, businesses, and public buildings on of improvement 10,400 acres of urban and urbanized lands located within the Nonconnah Creek flood plain. The Recommended Plan of Improvement includes 18.2 miles of channel improvement on Nonconnah Creek, recreation measures within channel construction rights-of-way, and acquisition of 47 acres of unique bottomland-wetland habitat for a nature area in the City of Memphis, Tennessee. The October 1985 estimated project first cost is $18,8000,000. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $4,486,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $2,791,000; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $547,000 and bear all costs of operation, maintenance and replacement of recreation facilities, presently estimated at $47,000 annually; pay 5 percent of the costs allocated to flood control, presently estimated at $1,265,000 and bear all costs of operation, maintenance and replacement of flood control facilities, presently estimated at $4,000 annually; and pay 33.3 percent of the separable and joint costs allocated to fish and wildlife enhancement, presently estimated at $102,000, and bear all costs of operation, maintenance and replacement of fish and wildlife facilities presently estimated at $2,000 annually. Average annual benefits are currently estimated at $3,700,000 of which $2,263,000 are for flood damage reduction, $549,000 for recreation, $412,000 for value of excavated material and $476,000 for bridge safety. The benefit cost ratio is 1.7 to 1 at 8-5/8 percent. The Fiscal Year 1986 funds are being used to initiate Phase II General Design Memorandum studies including soil borings, surveys, relocations, cultural resource investigations, project design, cost and benefit updates. Funds requested for Fiscal Year 1987 will be used to continue these Phase II General Design Memorandum studies. The continuation of Planning and Engineering effort is scheduled for completion in September 1987.

Total, Flood Damage Prevention Studies	8,975,000	2,150,000	2,414,000	2,158,000	2,253,000

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
5. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - NEW: None					
6. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - CONTINUING:					
a. Navigation: None					
b. Flood Damage Prevention: None					
c. Shoreline Protection: None					
d. Multiple Purpose Power: None					
7. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - CONTINUATION OF PLANNING AND ENGINEERING STUDIES:					
a. Navigation: None					
b. Flood Damage Prevention: None					
c. Shoreline Protection: None					
d. Multiple Purpose Power: None					
GRAND TOTAL - SURVEYS, CONTINUATION OF PLANNING AND ENGINEERING, AND PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN 1/	37,046,000	22,110,000	5,230,000	5,202,000	4,504,000

1/ Excludes Collection and Study of Basic Data which is a continuing program.

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APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO and TN Fiscal Year 1987

PROJECT: Mississippi River and Tributaries

ADVANCE ENGINEERING AND DESIGN AND CONSTRUCTION

LOCATION: The comprehensive project for Flood Control, Mississippi River and Tributaries will provide flood protection for the alluvial valley of the Mississippi River from Cape Girardeau, Missouri, to the Head of Passes, Louisiana; and for improvement of the Mississippi River for navigation from Cairo, Illinois, to Baton Rouge, Louisiana. It includes the main river, the basins of the St. Francis, White, Arkansas, Tensas, Red, Yazoo and Atchafalaya Rivers, the alluvial lands around Lake Pontchartrain, and the tributary streams in Western Tennessee and Kentucky. The completed project will provide protection against a project design flood, which will amount to a flow of 2,360,000 cubic feet per second at Cairo, Illinois, and 3,000,000 cubic feet per second at the latitude of Old River above Baton Rouge, Louisiana. This flow will divide near this point with 1,500,000 cubic feet per second going down the Atchafalaya River and the West Atchafalaya and Morganza Floodways. The remaining 1,500,000 cubic feet per second will continue down the Mississippi River to a point above New Orleans, where 250,000 cubic feet per second will be diverted through Bonnet Carre Spillway to Lake Pontchartrain. The flow past New Orleans to the Gulf of Mexico will then be 1,250,000 cubic feet per second, which is the river's safe capacity.

The control of this large quantity of water will be accomplished by every practical means of flood control, especially reservoirs, levees, cutoffs, revetments, and floodways.

The justification of the funds requested is presented on separate sheets for each major feature of the project. These major features are termed "projects" for the purposes of reporting, accounting, and fiscal control, and, where appropriate, are further separated into their separable units.

AUTHORIZATION: Flood Control Act of 1928, as amended.

SUMMARIZED FINANCIAL DATA		Accumulated % of Est. Fed. Cost
Total Estimated Cost	$ 9,162,238,000	
Allocations to 30 September 1985	3,976,194,000	
Alocations for FY 1986	203,995,000	
Allocations to Date	4,180,189,000	46
Allocations Requested for FY 1987	198,114,000	48
Scheduled Balance to Complete After FY 1987	4,444,106,000	
Unscheduled Balance to Complete After FY 1987	339,829,000	

COST ESTIMATES: The current Federal cost estimate of $9,162,238,000 for the Mississippi River and Tributaries project is a decrease of $156,064,000 from the latest estimate ($9,318,302,000) submitted to Congress. Details of the changes for features included in the FY 1987 budget request are shown under the individual features on the following pages of the Justification Data.

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APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries - AR, IL, KY, LA, MS, MO, and TN - General Investigations

PROJECT: Eastern Rapides and South-Central Avoyelles Parishes, Louisiana (Continuation of Planning)

LOCATION AND DESCRIPTION: The project is located in central and south-central Louisiana, southeast of Alexandria along and south of the Red River to the Red River backwater area and the West Atchafalaya Basin Floodway, and thence southward along and to the west of the west Atchafalaya Basin Protection levee to the latitude of Charenton, Louisiana. The plan of improvement provides for flood control by the enlargement of existing channels and the construction of new channels, disposal levees, and a diversion structure in the West Atchafalaya Basin Protection Levee. The construction of the above improvements will require additional improvements and mitigation measures to maintain existing fish and wildlife and recreational use. Public access and parking facilities to the improved channel at the Lake Pearl weir will be provided by extension of an existing road on the south side of the channel. The overall plan of improvement includes major drainage laterals and group and on-farm drainage systems to be provided under Public Law 566 by the United States Department of Agriculture, Soil Conservation Service.

AUTHORIZATION: Flood Control Act of 1970.

BENEFIT TO COST RATIO: The benefit to cost ratio last presented to Congress was 1.4 to 1. The current benefit to cost ratio is 1.3 to 1. The benefit to cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

Estimated Federal Cost		$49,950,000
Estimated Non-Federal Cost:		16,650,000
Cash Contribution	5,212,000	
Other	11,438,000	
Total Estimated Project Cost		$66,600,000 1/

Preconstruction Planning Estimate	$4,400,000
Allocations to 30 September 1985	1,217,000
Conference Allowance for FY 1986	130,000
Allocation for FY 1986	130,000
Allocation Requested for FY 1987	935,000
Balance to Complete Preconstruction Planning After FY 1987	2,118,000

1/ Does not include Federal and non-Federal costs for a companion flood control and drainage improvement plan to be accomplished under Public Law 566 by the Soil Conservation Service.

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Division: Mississippi River Commission

District: New Orleans

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Region: Lower Mississippi
Eastern Rapides and South-Central Avoyelles Parishes, LA

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JUSTIFICATION: Approximately 206,000 acres in the area are subject to flooding under existing conditions because of inadequate capacity of the existing streams and channels and inadequate natural outlets, resulting from construction of the levee system in the area. The flood problem has been aggravated in recent years by the rapid conversion of pasture, timber, and other marginal lands to the growing of soybeans since a profit can be realized even though the crop is flooded occasionally. Frequent flooding, which has occurred four or more times in some years, has substantially impaired development of usable lands in the flood plains and adjacent areas. Thus the full potential agricultural yields have not been realized and the most important resource of the area has not developed to its optimum. To realize optimum development of the area would require a major outlet channel to remove the flood threat and to carry the increased runoff from improved drainage contemplated in the area.

The total average annual benefits and designated redevelopment areas are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$ 9,883,000
Fish and Wildlife	675,000
Area Redevelopment	850,000
Savings in Authorized Improvements	403,000
Total	$11,811,000

Redevelopment Areas (PL 89-136)

State and Parish	Title	Subsection
Louisiana		
Acadia	IV	(8)
Avoyelles	IV	(2,8)
Evangeline	IV	(8)
Grant	IV	(8)
Natchitoches	IV	(1,2)
Pointe Coupee	IV	(1)
Rapides	IV	(8)
St. Landry	IV	(8)
St. Martin	IV	(8)
St. Mary	IV	(8)
Vernon	IV	(8)

Eastern Rapides and South-Central Avoyelles Parishes, LA

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NON-FEDERAL COSTS: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $5,288,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $6,150,000; pay five percent of the project costs allocated to flood control presently estimated at $5,212,000; and bear all costs of operation, maintenance and replacement of the project features, presently estimated at $272,000 annually.

STATUS OF LOCAL COOPERATION: Assurances for the project, consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, will be obtained prior to the initiation of construction.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $49,950,000 is a decrease of $10,850,000 from the latest estimate ($60,800,000) submitted to Congress. This change includes decreases of $12,050,000 based on adjustments between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, partially offset by increases of $1,200,000 due to higher price levels.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH THE CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 13 November 1970. The statement will be updated in connection with detailed planning and the draft statement is scheduled for submission to the Environmental Protection Agency in the third quarter of FY 1986 and the final in the first quarter of FY 1987.

The provisions of Section 404 of the Clean Water Act will be met with the issuance of a State of Louisiana Water Quality Certificate in the first quarter of FY 1987.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1972. Preconstruction planning is scheduled to be completed in September 1990.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Mississippi River Commission
District: New Orleans

Project: Eastern Rapides and South-Central Avoyelles Parishes, LA

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	15,333 (Jul 70)		60,800 (Oct 84)		49,950 (Oct 85)
Reason for Change		(45,467)		(-10,850)	
a. Price Escalation		41,991		1,200	
b. Design Changes					
c. Additional Function Added Under General Authorization					
d. Authorized Modification					
e. Post-Contract Award and Other Estimating Adjustments		1,599			
f. Schedule Changes					
g. Sundry		113		-12,050 1/	
h. Real Estate		1,764			

1/ Decreased $12,050 based on adjustment between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

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APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO and TN - General Investigations

PROJECT: L'Anguille River, Arkansas (Continuation of Planning)

LOCATION AND DESCRIPTION: The project is located in northeast Arkansas within the counties of Poinsett, Cross, Woodruff, St. Francis and Lee. The plan provides for channel improvement of 97.6 miles on the main stem L'Anguille River, 8.0 miles on First Creek and 6.4 miles on Brushy Creek.

AUTHORIZATION: Flood Control Act of 30 June 1948.

BENEFIT TO COST RATIO: The benefit to cost ratio of 1.2 to 1 is the same as that last presented to Congress (FY 1986). The benefit to cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

Estimated Federal Cost		$21,897,000
Estimated Non-Federal Cost		7,703,000
Cash Contribution	$1,480,000	
Other	6,223,000	
Total Estimated Project Cost		$29,600,000

Preconstruction Planning Estimate	$2,900,000
Allocation to 30 September 1985	1,555,000
Conference Allowance for FY 1986	370,000
Allocation for FY 1986	370,000
Allocation Requested for FY 1987	655,000
Balance to Complete Preconstruction Planning after FY 1987	320,000

JUSTIFICATION: The total area in the floodplain, based on the 1949 Flood in the headwater area and the 1937 backwater flood, is approximately 103,900 acres, of which about 87,000 acres are on the main stem of the L'Anguille River and approximately 16,900 acres on the tributaries (Brushy Creek below Mile 19 and First Creek below Mile 16). Improvements in the floodplain areas include houses, farm buildings, and other farm improvements. Principal crops in the floodplain are rice, soybeans, cotton, corn and wheat. Flood damages consist predominantly of loss of crop production, damage to roads and buildings, and cost for evacuation and reoccupation. Other losses include damages to farm improvements. Flooding in recent years has become more severe due to increased siltation in the channel and more runoff resulting from conversion of woodlands to croplands. Total average annual benefits and designated redevelopment areas are as follows:

Division: Mississippi River Commission District: Memphis Region: Lower Mississippi

4 FEB 1986 1020 L'Anguille River, Arkansas

Benefits	Amount (1 October 1985)
Flood Control	$2,086,000
Area Redevelopment	350,000
Total	$2,436,000

Redevelopment Areas (PL 89-136)

State and County	Title	Subsection
Arkansas		
Clay	IV	(2,8)
Craighead	IV	(6)
Crittenden	IV	(8)
Cross	IV	(2)
Green	IV	(2,8)
Jackson	IV	(8)
Lawrence	IV	(1)
Lee	IV	(2,7,8)
Mississippi	IV	(8)
Monroe	IV	(2,8)
Phillips	IV	(2,8)
Poinsett	IV	(8)
St. Francis	IV	(2)
Woodruff	IV	(2,8)
Missouri		
Dunklin	IV	(2)
Pemiscot	IV	(8)

NON-FEDERAL COST: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $3,200,000, modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $3,023,000, pay 5 percent of the costs allocated to flood control, presently estimated at $1,480,000, and bear all costs of operation, maintenance and replacement of flood control facilities, presently estimated at $62,000 annually.

STATUS OF LOCAL COOPERATION: Assurances for the project consistent with the cost sharing and financial concepts agreed to by the Administration and the Senate Majority Leadership will be obtained prior to the initiation of construction.

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COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $21,897,000 is a decrease of $3,903,000 over the latest estimate ($25,800,000) submitted to Congress. This change includes an increase of $600,000 for higher price levels which were offset by decreases of $4,503,000 based on adjustments between Federal and Non-Federal cost estimates estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH THE CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Environmental Protection Agency on 15 November 1985. The provisions of Section 404 of the Clean Water Act will be met by State Water Quality Certification and a Section 404(b)(1) evaluation.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in Fiscal Year 1981. Preconstruction planning is scheduled to be completed in June 1988.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Mississippi River Commission
District: Memphis

Project: L'Anguille River, Arkansas

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Item (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	5,620 (Jul 1965)		25,800 (Oct 1984)		21,897 (Oct 1985)
Reason for Change		(20,180)		(-3,903)	
a. Price Escalation		19,388		600	
b. Design Changes					
c. Additional Function Added Under General Authorization					
d. Authorized Modification					
e. Post-Contract Award and Other Estimating Adjustments		792			
f. Schedule Changes				-4,503 1/	
g. Sundry					
h. Real Estate					

1/ Decreased $4,503 based on adjustment between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and Senate Marjority Leadership.

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APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO, and TN - Construction

PROJECT: Mississippi River Levees, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tenn. ee (Continuing)

LOCATION: The Mississippi River Levee system on the west bank extends from Allenville, Missouri, on the Little River Diversion Channel generally southward to the vicinity of Venice, Louisiana, and on the east bank from Hickman, Kentucky, to opposite Venice, Louisiana, except where interrupted by hills and tributary streams. Included in the system are the levees which protect Mounds, Mound City and Cairo, Illinois, and the New Madrid Levee and Floodgate.

AUTHORIZATION: Flood Control Acts of 1928, 1936, 1938, 1941, 1946, 1950, 1954, 1962, 1965, and 1968, and PL 92-222

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 22.2 to 1 at 2-1/2 percent. The benefit to cost ratio is based on all features which comprise the Main Stem system of the Mississippi River and Tributaries project. This project feature of the system was authorized in Fiscal Year 1928 and initial construction funds were provided in Fiscal Year 1928. The authorized comprehensive review of the Mississippi River and Tributaries project, contained in House Document 308/88/2, as updated to reflect 1965 conditions and price levels, is considered to be the base estimate for the Main Stem system. The benefit to cost ratio for the Main Stem components computed for the base estimate was 7.9 to 1.

SUMMARIZED FINANCIAL DATA

					Accum % of Est Fed Cost
Estimated Total Appropriation Requirement		$1,229,000,000	Allocations to 30 September 1985	$541,442,000	
Future Non-Federal Reimbursement	$ 674,000		Conference Allowance for FY 1986	28,600,000	
Estimated Federal Cost (Ultimate)		1,228,326,000	Allocations for FY 1986	22,350,000 1/	
Estimated Non-Federal Cost		65,873,000	Allocations to Date	563,792,000	46
Reimbursement					
Recreation Facilities	$ 674,000		Allocation Requested for FY 1987	21,700,000	48
Cash Contribution	$ 573,000		Scheduled Balance to Complete After FY 1987	643,508,000	
Other	64,626,000		Unscheduled Balance to Complete After FY 1987	0	
Total Estimated Project Cost		$1,294,199,000			

1/ Reflects $6,235,000 reduction assigned as savings and slippage and transfer of $15,000 from the project.

DIVISION: Mississippi River Commission DISTRICT: Memphis, Vicksburg, and New Orleans REGION: Lower Mississippi Mississippi River Levees, AR, IL,KY, LA, MS, MO, and TN

FEB 1986

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STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	84	Aug 2008

PHYSICAL DATA

Channels and Canals	72 miles	Floodwalls:	
Levees:		Average Height	14 - 23 feet
Average height	20 - 35 feet	Length	14.8 miles
Length	1,518.0 miles	Levee Berms	563.0 miles
(Exclusive of 669.3 miles of Main Stem levees funded under other MR&T features)		Levee Roads	1,490.9 miles
		Pumping Stations	5

JUSTIFICATION: The Mississippi River Levee System provides complete protection to 23,600 square miles and partial protection to an additional 3,780 square miles in the alluvial valley subject to flooding by the project flood. The alluvial valley is over 650 miles long and varies in width from 20 to 90 miles. Numerous railroads, highways, and airfields connecting the transportation centers of New Orleans, Memphis, Cairo, St. Louis, Chicago, and Louisville lie within the protected area as do several major transcontinental communication routes. In addition to the vast highly developed and productive agricultural areas, the levees afford protection to urban areas and many large and varied industries whose products have a vital bearing on the welfare, economy, and defense capabilities of this country.

The Mississippi River Levees Project is one of the Main Stem components which comprise the plan of improvement for the control of floods on the Mississippi River. The contribution of each element to the overall plan is inseparably related to that made by the others. Therefore, their benefits are inseparable and a composite benefit to cost ratio for the Main Stem components is necessary. The components are: Mississippi River Levees, Channel Improvement, South Bank Arkansas and South Bank Red River Levees, the Atchafalaya Basin, Old River, and a few miscellaneous items. The benefit to cost ratio was derived by measuring the total benefits credited to these Main Stem components against their total cost. Total average annual benefits for the composite of Main Stem features and designated redevelopment areas for the project follow:

Benefits	Amount (1 October 1985)
Flood Control	$2,762,958,000
Navigation	1,349,000,000
Area Redevelopment	15,194,000
Recreation	3,978,000
Total	$4,131,130,000

Mississippi River Levees, AR, IL KY, LA, MS, MO, and TN

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Redevelopment Areas (PL 89-136)

State and County or Parish	Title	Subsection
Arkansas		
Chicot	IV	(2,8)
Clay	IV	(2,8)
Crittenden	IV	(8)
Desha	IV	(8)
Drew	IV	(8)
Greene	IV	(2,8)
Jefferson	IV	(6)
Lee	IV	(2,7,8)
Lincoln	IV	(2,8)
Lonoke	IV	(2)
Mississippi	IV	(8)
Monroe	IV	(2,8)
Phillips	IV	(2,8)
Poinsett	IV	(8)
St. Francis	IV	(2)
Illinois		
Alexander	IV	(1)
Pulaski	IV	(1)
Kentucky		
Calloway	IV	(8)
Carlisle	IV	(8)
Fulton	IV	(8)
Graves	IV	(8)
Hickman	IV	(8)
Marshall	IV	(1)
McCracken	IV	(6)
Louisiana		
Acadia	IV	(8)
Ascension	IV	(8)
Assumption	IV	(8)
Avoyelles	IV	(2,8)
Caldwell	IV	(8)
Catahoula	IV	(8)
Louisiana (Cont'd)		
Concordia	IV	(8)
East Baton Rouge	IV	(8)
East Carroll	IV	(2,7,8)
East Feliciana	IV	(8)
Evangeline	IV	(8)
Franklin	IV	(2,8)
Grant	IV	(8)
Iberville	IV	(1)
Jefferson	IV	(8)
LaSalle	IV	(8)
Livingston	IV	(1)
Madison	IV	(2,8)
Morehouse	IV	(8)
Orleans	IV	(8)
Ouachita	IV	(8)
Point Coupee	IV	(1)
Rapides	IV	(8)
Richland	IV	(8)
St. Bernard	IV	(8)
St. Charles	IV	(6)
St. Helena	IV	(2,8)
St. James	IV	(8)
St. John the Baptist	IV	(8)
St. Landry	IV	(8)
St. Martin	IV	(8)
St. Mary	IV	(8)
St. Tammany	IV	(8)
Tangipahoa	IV	(8)
Tensas	IV	(2,8)
Vermilion	IV	(7,8)
West Baton Rouge	IV	(8)
West Carroll	IV	(1)

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1026 Mississippi River Levees, AR, IL KY, LA, MS, MO, and TN

State and County or Parish	Title	Subsection
Mississippi		
Adams	IV	(8)
Amite	IV	(2,8)
Bolivar	IV	(2)
Claiborne	IV	(2,8)
Coahoma	IV	(2,7,8)
Copiah	IV	(8)
Desoto	IV	(8)
Franklin	IV	(8)
Holmes	IV	(2,7,8)
Humphrey	IV	(2,8)
Issaquena	IV	(2,8)
Jefferson	IV	(2,7,8)
Leflore	IV	(8)
Lincoln	IV	(8)
Madison	IV	(8)
Marshall (In Appalachian Region)	IV	(2,8)
Panola	IV	(8)
Quitman	IV	(2,8)
Sharkey	IV	(2,7,8)
Sunflower	IV	(2,8)
Tallahatchie	IV	(2,7,8)
Tate	IV	(8)
Tunica	IV	(2,7,8)
Warren	IV	(8)
Washington	IV	(8)
Wilkinson	IV	(2,8)
Yazoo	IV	(2,8)
Missouri		
Butler	IV	(8)
Dunklin	IV	(2)
Mississippi	IV	(1,2)
New Madrid	IV	(2)
Pemiscot	IV	(8)
Scott	IV	(6)
Wayne	IV	(2,7,8)
Tennessee		
Crockett	IV	(8)
Dyer	IV	(6)
Fayette	IV	(2,8)
Gibson	IV	(8)
Haywood	IV	(2,8)
Lake	IV	(2)
Lauderdale	IV	(2)
Madison	IV	(6)
Obion	IV	(6)
Tipton	IV	(8)
Weakley	IV	(8)

Fiscal Year 1987: The requested amount of $21,700,000 will be applied as follows:

Initiate:	
West Memphis, AR Berm, Parcel 1	$ 600,000
Cache River Pumping Station (Supply)	600,000
Lake Beulah Berm, MS	826,000
Montegut-Independence, LA Floodwall, Mile 93.9 to Mile 93.3 -L	446,000
Jackson-Thalia, LA Floodwall, Mile 97.2 to Mile 95.6 -L	455,000
Westwego, LA, Levee Enlargement, Mile 105 to Mile 100 -R	450,000

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Bridge City, LA, Levee Enlargement, Mile 107 to Mile 105 -R	55,000
Smithfield-Lobdell, LA, Levee Enlargement, Mile 248 to Mile 234 -R	1,541,000
Waggaman, LA, Levee Enlargement, Mile 110 to Mile 108 -R	104,000
Continue:	
Lands and Damages	500,000
Miscellaneous Relocations	176,000
English Turn, LA, Levee Enlargement, Mile 81.6 to Mile 75.6 -L	1,583,000
Complete:	
Walnut Bend, Item R-678 Seepage Control	937,000
Cairo-Mound City, P-2, Seepage Control	1,108,000
Above Cairo Berm, P-2	200,000
Harwood-Grand Lake, Item 514-R	701,000
Lake Bolivar Berm, MS, Item 570.0-L	1,420,000
Barracks-Montegut, LA, Floodwall, Mile 94.3 to Mile 93.9 -L	323,000
Laplace-Destrehan, LA, Levee Enlargement, Mile 133 to Mile 121 -L	1,226,000
Stella-Belair, LA, Levee Enlargement, Mile 72.2 to Mile 66.0 -L	1,175,000
Surveys and Layouts	70,000
Miscellaneous Hired Labor	48,000
Engineering and Design	5,154,000
Supervision and Administration	2,002,000
TOTAL	$21,700,000

The funds requested are the minimum necessary to meet the present estimated completion date. They provide for continuation of a levee raising program, construction of levee berms to alleviate bad seepage conditions, the levee raise required as a result of a revision in the flow line brought about by the analysis of flows experienced in the 1973 Mississippi River Flood, and initiation of a supply contract on one pumping station.

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NON-FEDERAL COSTS: Local interests are required to provide without cost to the United States all rights-of-way for levee foundations and levees on the Main Stem of the Mississippi River between Cape Girardeau, Missouri, and Head of Passes, Louisiana, except for levee setbacks, and that required for the Tiptonville-Obion Levee Extension, and to maintain the project after completion. Section 7 of PL 92-222 approved 5 December 1971, further modified the project for flood control and improvement of the Lower Mississippi River adopted by the Act of May 15, 1928, to provide that local interests agree to maintain the Obion River Diversion works in accordance with the provisions of Section 3, of the Act of May 15, 1928, and hold and save the United States free from damages due to the construction works.

Local interests are also required to bear 50 percent of the separable cost of recreation facilities at various sites along the Mississippi River. The current cost estimate is $3,705,000 of which local interests share will be $2,262,000 (lands - $1,015,000 and contributions of $1,247,000). Local interests' contributions include a cash contribution of $674,000 to be repaid to the Federal Government over a period not to exceed 50 years.

STATUS OF LOCAL COOPERATION: After passage of the 1928 Flood Control Act, the 37 levee districts along the Mississippi River adopted resolutions assuring the United States that the requirements of local cooperation will be met. These local interests have acquired all rights-of-way for work completed and underway and will try to provide the rights-of-way for work scheduled for Fiscal Year 1986. Some levee boards have failed to provide rights-of-way when requested to do so, even for construction work in areas where the existing levees are furtherest below the authorized grade. Supplemental assurances covering the requirements of PL 91-646, Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970, have been accepted for Main Stem Mississippi River Levees in Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee.

Assurances of local cooperation for the recreation facilities at Warfield Point, Mississippi, were accepted on 14 October 1969. Supplemental assurances covering PL 91-611 and PL 91-646 were accepted 7 August 1972. Assurances have not as yet been received for the recreation facilities at Mississippi River State Park, Arkansas.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $1,229,000,000 is a decrease of $117,000,000 from the latest estimate ($1,346,000,000) submitted to Congress. This change includes increases of $228,000 in lands and damages based on a recent reanalysis of requirements, $1,449,000 based on actual cost of completed work, $259,000 for contract modification, and $4,946,000 in Engineering and Design and $660,000 in Supervision and Administration based on a recent reanalysis of requirements. These increases were more than offset by decreases of $48,038,000 for adjustments in the estimated inflation allowance through the construction period, $71,149,000 based on more detailed planning of construction, and $5,355,000 due to receipt of favorable bids.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 16 April 1976.

The provisions of Section 404 of the Clean Water Act will be followed as detailed plans for individual work items are developed.

Mississippi River Levees, AR, IL
KY, LA, MS, MO, and TN

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OTHER INFORMATION: Initial construction funds were appropriated in FY 1928.

In May 1983 the U. S. District Court for the Eastern District of Missouri enjoined the Government from artificially crevassing the frontline levee to operate the Bird's Point-New Madrid Floodway during high flood stages of the Mississippi River and denied the Government immediate possession of the lands described in the Declarations of Taking. The Government appealed the District Court's orders. Oral argument was heard in the Eighth Circuit Court of Appeals on 14 and 15 September 1983. The Appellate Court certified the case back to the District Court to complete the record while retaining jurisdiction. The hearing in District Court was conducted on 11, 12, 13, 17 and 18 October 1983. The District Court issued its Order on 31 October 1983, again enjoining the Government. Oral argument was heard in the Appellate Court on 3 November 1983. The 8th Circuit Court of Appeals affirmed the government's position in an opinion handed down on 13 April 1984. The appellees petitioned the Circuit Court for a re-hearing en banc, which petition was denied on 16 July 1984. The case is now pending in the District Court for resolution of the sole issue of just compensation for the rights acquired by the United States under the March 1983 Declaration of Taking. No dates for trial have been set. In view of the Circuit Court's decision and the revised operational plan for the floodway, it is expected that efforts will be made to resolve the litigation by settlement prior to trial.

In response to a request from the Assistant Secretary of the Army for Civil Works, a draft Informational Technical Report has been prepared which provides a comparison of gated structures to operate the floodway as an alternative to the present plan of artificial crevassing. The draft Informational Technical Report was submitted to Office, Chief of Engineers, on 15 October 1984 and to Assistant Secretary of the Army for Civil Works on 1 November 1984. The finalized report was submitted to the Office, Chief of Engineers, on 17 May 1985 and to the Assistant Secretary of the Army for Civil Works on 6 June 1985. No further action is planned at this time.

Authority to investigate the feasibility of modifying the plan of operation for the floodway was requested by the Memphis District and approved by the Mississippi River Commission. The modified plan provides more positive control over operation of the floodway, greater flexibility in operation , allows for additional time to evaluate the need for operation, allows for natural overtopping fuse plug levees at higher stages, as well as having other advantages over the previous plan. The modified plan was approved by the President, Mississippi River Commission, on 15 August 1985. All construction associated with the plan has been completed. The plan has been coordinated with the State of Missouri.

As a result of local interest contacts with congressional representation, coordination with the Port Authority has been initiated to ensure that its plan for port development was compatible with the floodway operating plan. Pursuant to the above, alternatives which allowed for port development consistent with floodway operations were outlined and studies initiated to determine their feasibility in December 1982. As a result of litigation concerning the floodway operation in May 1983, the study efforts were held in abeyance pending release from the litigation. Upon release from litigation in September 1984, study efforts were resumed and a report is scheduled for submission to the Mississippi River Commission on 10 January 1986. After review by the Mississippi River Commission staff, Memphis District will coordinate the report with the State of Missouri, Levee District No. 3, and St. Johns Bayou Levee and Drainage District.

1030 Mississippi River Levees, AR, IL KY, LA, MS, MO, and TN

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE

Division: Mississippi River Commission
District: Memphis, Vicksburg, and New Orleans

Project: Mississipppi River Levees, AR, IL, KY, LA, MS, MO, and TN

Item	Original Baseline (1)	Estimates Presented to Congress ($1,000) Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	265,000 (Jul 1965)		1,346,000 1/		1,229,000 1/2/
Reason for Change		(1,081,000) 1/		(-117,000) 2/	
a. Price Escalation		771,294		-47,970	
b. Design Changes		304,047			
c. Additional Functions Added Under General Authorization		38,308			
d. Authorized Modification		38,408			
e. Post-Contract Award and Other Estimating Adjustments		-85,217		-68,962 3/	
f. Schedule Change					
g. Sundry		11,337			
h. Real Estate		2,823		-68	

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes a decrease of $48,038 for adjustments in estimated inflation allowance through the construction period.
3/ Increased $1,449 based on actual cost of completed contracts, $259 for contract modification, $4,946 in Engineering and Design and $660 in Supervision and Administration based on a recent reanalysis of requirements, and $228 for additional Lands and Damages based on a recent reanalysis of requirements. Decreased $71,149 due to reassessment of remaining work based on current construction and relocation costs, and $5,355 due to favorable bids received.

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APPROPRIATION TITLE
FC,MR&T

CLASSIFICATION, MISSISSIPPI RIVER LEVEES
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
LANDS AND DAMAGES	6,025,000	1,406,000	86,000	500,000	4,033,000
RELOCATIONS	77,203,000	11,576,000	1,354,000	281,000	63,992,000
CHANNELS & CANALS	37,210,000	491,000	0	0	36,719,000
LEVEES & FLOODWALLS	830,960,000	392,847,000	17,341,000	13,963,000	406,809,000
PUMPING PLANT	12,552,000	7,792,000	0	600,000	4,160,000
RECREATION FACIL	2,278,000	1,312,000	0	0	966,000
CULT RES PRESERVATION	141,000	0	0	0	141,000
ENGR AND DESIGN	146,596,000	77,971,000	6,013,000	5,154,000	57,458,000
SUPER AND ADMIN	116,608,000	42,629,000	2,174,000	2,002,000	69,803,000
FED AND NON-FED					
TOTAL COST - SCHED	1,229,573,000	536,024,000	26,968,000	22,500,000	644,081,000
UNDELIVERED ORDERS		4,767,000	-3,967,000	-800,000	0
TOTAL OBLIGATIONS		540,791,000	23,001,000	21,700,000	644,081,000
FEDERAL FUNDS					
TOTAL COST - SCHED	1,229,000,000	536,024,000	26,968,000	22,500,000	643,508,000
UNDELIVERED ORDERS		4,767,000	-3,967,000	-800,000	0
TOTAL OBLIGATIONS		540,791,000	23,001,000	21,700,000	643,508,000
NON-FEDERAL FUNDS					
TOTAL COST - SCHED	573,000	0	0	0	573,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	0	0	573,000

EFFECTIVE DATE
01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, DIVISION OFFICE

REGION, MISSISSIPPI RIVER
BASIN, MAIN STEM

PROJECT, MISSISSIPPI RIVER LEVEES

1038

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APPROPRIATION TITLE
FC,MR&T

CLASSIFICATION, MISSISSIPPI RIVER LEVEES
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FED AND NON-FED					
ALLOCATIONS		541,443,000	22,350,000		
UNOB CARRYOVER PFY			651,000		
TOTAL AVAIL FOR OBL		0	23,001,000		
APPROPRIATION REQUIRED				21,700,000	644,081,000
FEDERAL FUNDS					
ALLOCATIONS		541,443,000	22,350,000 1/		
UNOB CARRYOVER PFY			651,000		
TOTAL AVAIL FOR OBL		0	23,001,000		
APPROPRIATION				21,700,000	643,508,000
				FUTURE FEDERAL REQUIREMENTS	
				FISCAL YEAR 1988	26,299,000
				FISCAL YEAR 1989	30,701,000
				FISCAL YEAR 1990	32,500,000
				FISCAL YEAR 1991	39,500,000
				REMAINING BALANCE	514,508,000
NON-FEDERAL FUNDS					
CONTRIBUTIONS		0	0		
UNOB CARRYOVER PFY					
TOTAL AVAIL FOR OBL		0	0		
CONTRIBUTION REQUIRED				0	573,000

1/ REFLECTS $6,235,000 REDUCTION ASSIGNED AS SAVINGS AND SLIPPAGE AND TRANSFER OF $15,000 FROM THE PROJECT.

EFFECTIVE DATE
01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, DIVISION OFFICE

REGION, MISSISSIPPI RIVER
BASIN, MAIN STEM

PROJECT, MISSISSIPPI RIVER
LEVEES

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APPROPRIATION TITLE
FC,MR&T

CLASSIFICATION, MISSISSIPPI RIVER LEVEES
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

FUTURE NON-FED REQUIREMENTS	
FISCAL YEAR 1988	0
FISCAL YEAR 1989	0
FISCAL YEAR 1990	0
FISCAL YEAR 1991	0
REMAINING BALANCE	573,000

NON-FEDERAL COSTS	
CASH CONTRIBUTIONS	573,000
OTHER COSTS	65,300,000
LANDS AND DAMAGES	(64,304,000)
RELOCATIONS	(0)
OTHER	(996,000)

EFFECTIVE DATE
01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, DIVISION OFFICE

REGION, MISSISSIPPI RIVER
BASIN, MAIN STEM

PROJECT, MISSISSIPPI RIVER
LEVEES

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APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO and TN - Construction

PROJECT: Channel Improvement, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee (Continuing)

LOCATION: The project is located in the Mississippi River and along its banks from the vicinity of Cairo, Illinois, to the Head of Passes, Louisiana, a distance of approximately 966 miles.

AUTHORIZATION: Flood Control Acts of 1928, 1936, 1938, 1941, 1944, 1962, 1965, 1966, and 1970

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 22.2 to 1 at 2-1/2 percent. The benefit to cost ratio is based on all features which comprise the Main Stem system of the Mississippi River and Tributaries project. This project feature of the system was authorized in Fiscal Year 1928 and initial construction funds were provided in Fiscal Year 1928. The authorized comprehensive review of the Mississippi River and Tributaries project, contained in House Document 308/88/2, as updated to reflect 1965 conditions and price levels, is considered to be the base estimate for the Main Stem system. The benefit to cost ratio for the Main Stem components computed for the base estimate was 7.9 to 1.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Federal Cost		$3,010,000,000	
Estimated Non-Federal Cost		1,104,000	
Cash Contributions	1,017,000		
Other Cost	87,000		
Total Estimated Project Cost		$3,011,104,000	
Allocations to 30 September 1985		1,442,521,000	
Conference Allowance for FY 1986		68,000,000	
Allocation for FY 1986		68,000,000	
Allocations to Date		1,510,521,000	50
Allocation Requested for FY 1987		75,100,000	53
Scheduled Balance to Complete After FY 1987		1,424,379,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	86	Mar 2010
PHYSICAL DATA		
Lands and damages	18,978.89 acres	
Revetments	968 Miles	
Dikes	296 Miles	
Dredging	As required	
Foreshore Protection	168 Miles	
Pumping Station	1	

Division: Mississippi River Commission District: Memphis, Vicksburg, and New Orleans
4 FEB 1986

Region: Lower Mississippi Channel Improvement, AR, IL, KY, LA, MS, MO and TN

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JUSTIFICATION: The Mississippi River, with a drainage area of about 1,245,000 square miles, has a wide range of flow, increasing from an approximate minimum of 90,000 cubic feet per second (675,000 gallons per second) to a maximum of 2,345,000 cubic feet per second (17,587,000 gallons per second) which occurred in 1927 at the latitude of Red River Landing. The project flood is 3,000,000 cubic feet per second (22,500,000 gallons per second). Part of the tremendous energy of this volume of flowing water is directed toward a relentless attack on the banks of the river, causing the unprotected banks to cave into the river. As this caving progresses, the attack become more direct, the bendway moves in toward the levee, and more sand is placed in the river and deposited downstream in the form of a sandbar. This bar gradually builds out into the channel and deflects the river's attack to the opposite bank. As the cycle is repeated the river tends to meander and lengthen. Revetment is placed against the banks of the river at locations where mainline levees are being threatened with destruction or where unsatisfactory alignment and channel conditions are developing. Revetment serves a three-fold purpose in that the river is prevented from encroaching on the Main Stem levees, excess material is kept out of the stream, and a favorable channel alignment and depth are maintained. An objective of the plan is to preserve favorable alignments and efficient cross-sectional areas and to prevent the river from creating new meander patterns. In wide reaches of the river, dikes are used to contract the channel width so as to produce a single efficient channel for navigation and to insure the flood carrying capacity of the river. Chutes and secondary channels are closed for the same purpose. Improvement dredging is employed to assist the river in removing natural obstructions which deflect the current into undesirable patterns of flow and to assist in developing an efficient channel. Foreshore protection is utilized to preserve the integrity of the Mississippi River Levees from attack by erosion of the batture. Erosion of the batture leads to steep slopes which, when undermined, result in considerable loss of batture and possible failure of the levee.

The Channel Improvement Project is one of the Main Stem components which comprise the plan of improvement for the control of floods on the Mississippi River. The contribution of each element to the overall plan is inseparably related to that made by the others. Therefore, their benefits are inseperable and a composite benefit to cost ratio for the Main Stem components is necessary. The components are: Mississippi River Levees, Channel Improvement, South Bank Arkansas and South Bank Red River Levees, the Atchafalaya Basin, Old River, and a few miscellaneous items. The benefit to cost ratio was derived by measuring the total benefits credited to those Main Stem components against their total cost. The total average annual benefits for the composite of Main Stem features and designated redevelopment areas for the project follow:

BENEFITS	AMOUNT (1 October 1985)
Flood Control	$2,762,958,000
Navigation	1,349,000,000
Area Redevelopment	15,194,000
Recreation	3,978,000
Total	$4,131,130,000

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1036 Channel Improvement, AR, IL, KY, LA, MS, MO, and IL

Redevelopment Areas (PL 89-136)

State and County or Parish	Title	Subsection
Arkansas:		
Chicot	IV	(2,8)
Clay	IV	(2,8)
Crittenden	IV	(8)
Desha	IV	(8)
Drew	IV	(8)
Greene	IV	(2,8)
Jefferson	IV	(6)
Lee	IV	(2,7,8)
Lincoln	IV	(2,8)
Lonoke	IV	(2)
Mississippi	IV	(8)
Monroe	IV	(2,8)
Phillips	IV	(2,8)
Poinsett	IV	(8)
St. Francis	IV	(2)
Illinois:		
Alexander	IV	(1)
Pulaski	IV	(1)
Kentucky:		
Calloway	IV	(8)
Carlisle	IV	(8)
Fulton	IV	(8)
Graves	IV	(8)
Hickman	IV	(8)
Marshall	IV	(1)
McCracken	IV	(6)
Louisiana:		
Arcadia	IV	(8)
Ascension	IV	(8)
Assumption	IV	(8)
Avoyelles	IV	(2,8)
Caldwell	IV	(8)
Catahoula	IV	(8)
Concordia	IV	(8)
East Baton Rouge	IV	(8)
East Carroll	IV	(2,7,8)
East Feliciana	IV	(8)
Evangeline	IV	(8)
Franklin	IV	(2,8)
Grant	IV	(8)
Iberville	IV	(1)
Jefferson	IV	(8)
LaSalle	IV	(8)
Livingston	IV	(1)
Madison	IV	(2,8)
Morehouse	IV	(8)
Orleans	IV	(8)
Ouachita	IV	(8)
Pointe Coupe	IV	(1)
Rapides	IV	(8)
Richland	IV	(8)
St. Bernard	IV	(8)
St. Charles	IV	(6)
St. Helena	IV	(2,8)
St. James	IV	(8)
St. John the Baptist	IV	(8)
St. Landry	IV	(8)
St. Martin	IV	(8)
St. Mary	IV	(8)
St. Tammany	IV	(8)
Tangipahoa	IV	(8)
Tensas	IV	(2,8)
Vermilion	IV	(7,8)
West Baton Rouge	IV	(8)
West Carroll	IV	(1)
Mississippi:		
Adams	IV	(8)
Amite	IV	(2,8)

Channel Improvement, AR, IL, KY, LA, MS, MO, and TN

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Redevelopment Areas (PL 89-136)

State and County or Parish	Title	Subsection
Mississippi: (Cont'd)		
Bolivar	IV	(2)
Claiborne	IV	(2,8)
Coahoma	IV	(2,7,8)
Copiah	IV	(8)
DeSota	IV	(8)
Franklin	IV	(8)
Holmes	IV	(2,7,8)
Humphrey	IV	(2,8)
Issaquena	IV	(2,8)
Jefferson	IV	(2,7,8)
Leflore	IV	(8)
Madison	IV	(8)
Marshall (In Appalachia Region)	IV	(2,8)
Panola	IV	(8)
Quitman	IV	(2,8)
Sharkey	IV	(2,7,8)
Sunflower	IV	(2,8)
Tallahatchie	IV	(2,7,8)
Tate	IV	(8)
Tunica	IV	(2,7,8)
Warren	IV	(8)
Washington	IV	(8)
Wilkinson	IV	(2,8)
Yazoo	IV	(2,8)
Missouri:		
Butler	IV	(8)
Dunklin	IV	(2)
Mississippi	IV	(1,2)
New Madrid	IV	(2)
Pemiscot	IV	(8)
Scott	IV	(6)
Wayne	IV	(2,7,8)
Tennessee:		
Crockett	IV	(8)
Dyer	IV	(6)
Fayette	IV	(2,8)
Gibson	IV	(8)
Haywood	IV	(2,8)
Lake	IV	(2)
Lauderdale	IV	(2)
Madison	IV	(6)
Obion	IV	(8)
Tipton	IV	(8)
Weakley	IV	(8)

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Channel Improvement, AR, IL, KY, LA, MS, MO, and TN

4 FEB 1038

FISCAL YEAR 1987: The requested amount of $75,100,000 will be applied as follows:

Revetments	$67,600,000
Dikes	7,500,000
Total	$75,100,000

Revetments: The planned program consists of items of work for which funds will be required as follow:

Construction of Revetments	$59,435,000
Cultural Resources	60,000
Engineering and Design	6,022,000
Supervision and Administration	2,083,000
	$67,600,000

The items of revetment work are:	Approximate Length in Feet
Toneys Towhead, KY-TN (ACH)	2,500
Little Cypress, MO (ACM)	2,000
Ensley, TN (SP)	1,500
Commerce, MS (TF)	1,500
Peters, AR (SP)	5,200
Morville, LA	3,000
Railroad Landing, MS	2,300
Glasscock Cutoff, MS-LA	6,700
Deadman's Bend, MS	3,000
Bougere Bend, LA	2,000
Bayou Sara, LA	10,000
Faulkner Lake, LA	7,500
White Castle, LA	1,300
Burnside, LA	2,500
Rich Bend, LA	5,000
Angelina, LA	6,500
Scarsdale, LA	2,000
Alliance, LA	2,000
Myrtle Grove, LA	1,600
Venice, LA	12,000
Reinforcement	14,505

Funds are required to extend the existing revetments and assure the continued effectiveness of the completed work. The continuation of the program will prevent loss or damage to existing revetments which could result in additional costs for replacement or repairs.

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Dikes: The planned dike work consists of the following items:

Robinson Bayou, MO	$1,000,000
Redman Point-Hopefield Point, AR	1,000,000
Porter Lake, AR	550,000
Commerce, MS	350,000
Ajax Bar, MS	600,000
Opposite Warnicott LDG, MS	700,000
Arcadia Point, MS	800,000
Permits and Crop Damages	5,000
Surveys and Layouts	140,000
Engineering and Design	1,685,000
Supervision and Administration	670,000
Total - Dikes	$7,500,000

Funds will be used for the construction of dikes at these locations to assist in the establishment and stabilization of the river channel. Systems of dikes are designed and constructed to encourage deposition of silt in and closure of secondary channels, to develop stable channels, to confine flows to a single channel, and to assist in maintaining a low-water navigation channel.

NON-FEDERAL COST: Local interests are required to bear 50 percent of the separable cost of recreation facilities at various sites along the Mississippi River. The total estimated cost includes Dorena, Missouri; Richardson Landing, Tennessee; Volunteer Bicentennial Park, Tennessee; and Lake Neark, Arkansas, sites. The total estimated non-Federal cost is $1,104,000 distributed as follows:

Lands and Damages	$ 87,000
Cash Contribution (Recreation)	1,017,000
Total	$1,104,000

In addition, local interests will be required to operate and maintain the recreation facilities after construction at an estimated cost of $100,000 annually.

STATUS OF LOCAL COOPERATION: Assurances for the Dorena Recreation Facility were accepted 27 August 1971; for the Richardson Landing Recreation Facility on 3 September 1976 and for Volunteer Bicentennial Park on 11 September 1975. Assurances for Lake Neark, Arkansas, are embodied in the contract for cost sharing approved by the Office of the Chief of Engineers on 19 September 1982.

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COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $3,010,000,000 is an decrease of $3,000,000 from the latest estimate ($3,013,000,000) submitted to Congress. This change includes an increase of $10,000 in Engineering and Design based on a recent reanalysis of requirements which was more than offset by decreases of $2,907,000 for adjustments in the estimated inflation allowance through the construction period, $1,000 based on actual cost of completed work, $34,000 for Supervision and Administration based on a recent reanalysis requirements, and $68,000 in lands and damages based on a recent reanalysis of requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with Council on Environmental Quality on 16 April 1976.

The provisions of Section 404 of the Clean Water Act for the revetments and dikes feature of the project was accomplished by the Memphis District Engineer on 30 August 1976, the Vicksburg District Engineer on 30 July 1976, and the New Orleans District Engineer on 11 May 1976.

OTHER INFORMATION: Initial construction funds were appropriated in FY 1928.

The need to complete the project below Baton Rouge, Louisiana, becomes more critical each year. For all practical purposes, the levees constitute the banks of the river. Between Baton Rouge and New Orleans, Louisiana, usable land is limited to a strip about 2 miles wide on each side of the river. Below New Orleans, these strips narrow to a few hundred yards. In addition to the metropolitan and urban growth that is continuing at a rapid rate, the vast industrial complex that has developed along these usable strips of land is continuing to expand. Many of the facilities are energy related and much of the new expansion is associated with coal handling and shipping facilities.

This accelerated development below Baton Rouge can be attributed to three major factors: (1) an unlimited supply of freshwater, (2) economical river transportation, and (3) assurance of flood protection and stable channel banks for permanence of industrial and other investments. This water is available and the navigation channel is being improved and maintained as demands require. Levees have been constructed to prevent flooding and progress has been made in stabilizing channel banks.

Since the rate of bank caving is primarily a function of flood height and duration, the threat to the levees from bank caving is much greater during flood periods when levee failures would be the most disastrous. Until the channel is completely stabilized with revetment, the threat of levee crevasses during flood stages will exist.

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The following language was included in House Report 98-755, page 38,

"Within available funds, $600,000 shall be made available for emergency repairs to correct serious erosion problems by providing high water protection on the Mississippi River downstream of the St. Francisville Ferry Landing in Pointe Coupe Parish, La." This item was awarded in July 1985 and completed in September 1985.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE

Division: Mississippi River Commission
District: Memphis, Vicksburg, and New Orleans

Project: Channel Improvement, AR, IL, KY, LA, MS, MO, and TN

Item	Original Baseline (1)	Estimates Presented to Congress ($1,000) Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	942,020 (Jul 1965)		3,013,000 1/		3,010,000 1/4/
Reason for Change		(2,070,980) 1/		(-3,000) 1/4/	
a. Price Escalation		1,457,069		-2,907	
b. Design Changes		6,045			
c. Additional Function Added Under General Authorization		1,888			
d. Authorized Modification		586,050 2/			
e. Post-Contract Award and Other Estimating Adjustment		20,529		-93 3/	
f. Schedule Change					
g. Sundry		-610			
h. Real Estate		9			

1/ Includes an allowance for estimated inflation allowance through the construction period.
2/ Update of Master Plan July 1972.
3/ Includes decreases of $1 based on actual cost of completed work; $34 for Supervision and Administration based on a recent reanalysis of requirements; and $68 in Lands and Damages based on a recent reanalysis of requirements. These decreases were partially offset by an increase of $10 for Engineering and Design based on a recent reanalysis of requirements.
4/ Includes a decrease of $2,907 for adjustments in the estimated inflation allowance through the construction period.

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APPROPRIATION TITLE
FC, MR&T, AR, IL, KY, LA, MS, MO, AND TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
LAND AND DAMAGES	757,000	727,000	0	0	30,000
CHANNELS & CANALS	201,091,000	104,378,000	0	0	96,713,000
PUMPING PLANT	244,000	244,000	0	0	0
RECREATION FACIL	2,030,000	2,030,000	0	0	0
BANK STABILIZATION	2,462,577,000	1,165,126,000	60,459,000	64,580,000	1,172,412,000
CULT RES PRESERVATION	581,000	134,000	60,000	60,000	327,000
ENGR AND DESIGN	173,535,000	89,769,000	7,769,000	7,707,000	68,290,000
SUPER AND ADMIN	170,202,000	78,169,000	2,663,000	2,753,000	86,617,000
FED AND NON-FED					
TOTAL COST - SCHED	3,011,017,000	1,440,577,000	70,951,000	75,100,000	1,424,389,000
UNDELIVERED ORDERS	0	1,406,000	-1,406,000	0	0
TOTAL OBLIGATIONS	0	1,441,983,000	69,545,000	75,100,000	1,424,389,000
FEDERAL FUNDS					
TOTAL COST - SCHED	3,010,000,000	1,439,570,000	70,951,000	75,100,000	1,424,379,000
UNDELIVERED ORDERS	0	1,406,000	-1,406,000	0	0
TOTAL OBLIGATIONS	0	1,440,976,000	69,545,000	75,100,000	1,424,379,000
NON-FEDERAL FUNDS					
TOTAL COST - SCHED	1,017,000	1,007	0	0	10
UNDELIVERED ORDERS	0	0	0	0	0

EFFECTIVE DATE
01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, DIVISION OFFICE

REGION, MISSISSIPPI RIVER
BASIN, MAIN STEM

PROJECT, CHANNEL IMPROVEMENT
AR, IL, KY, LA, MS, MO
AND TN

4 FEB 1986

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APPROPRIATION TITLE
FC, MR&T, AR, IL, KY, LA, MS, MO, AND TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
METHOD OF FINANCING					
FED AND NON-FED					
ALLOCATIONS		1,443,527,000	68,000,000		
UNOB CARRYOVER PFY			1,545,000		
TOTAL AVAIL FOR OBL		0	69,545,000		
APPROPRIATION REQUIRED				75,100,000	1,424,389,000
FEDERAL FUNDS					
ALLOCATIONS		1,442,521,000	68,000,000		
UNOB CARRYOVER PFY			1,545,000		
TOTAL AVAIL FOR OBL		0	69,545,000		
APPROPRIATION REQUIRED				75,100,000	1,424,379,000

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FUTURE FEDERAL REQUIREMENTS

FISCAL YEAR 1988	88,000
FISCAL YEAR 1989	94,900
FISCAL YEAR 1990	96,100
FISCAL YEAR 1991	100,000
REMAINING BALANCE	1,045,379

EFFECTIVE DATE
01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, DIVISION OFFICE

REGION, MISSISSIPPI RIVER
BASIN, MAIN STEM

PROJECT, CHANNEL IMPROVEMENT
AR, IL, KY, LA, MS, MO
AND TN

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APPROPRIATION TITLE
FC, MR&T, AR, IL, KY, LA, MS, MO, AND TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
NON-FEDERAL FUNDS					
CONTRIBUTIONS		1,007,000			
UNOB CARRYOVER PFY		0			
TOTAL AVAILA FOR OBL		0			
CONTRIBUTION REQUIRED			0	0	10
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS	1,017,000				
OTHER COSTS					
LANDS AND DAMAGES	87,000				
RELOCATIONS	0				
OTHER (SPECIFY)	0				

FUTURE NON-FED REQUIREMENTS

FISCAL YEAR 1986	0
FISCAL YEAR 1987	0
FISCAL YEAR 1988	0
FISCAL YEAR 1989	0
REMAINING BALANCE	10

EFFECTIVE DATE
01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, DIVISION OFFICE

REGION, MISSISSIPPI RIVER
BASIN, MAIN STEM

PROJECT, CHANNEL IMPROVEMENT
AR, IL, KY, LA, MS, MO
AND TN

1046

APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO, and TN - Construction

PROJECT: Old River, Louisiana (Continuing)

LOCATION: The project is located in the lower portion of the Red River backwater area between the Red and Mississippi Rivers and above the Pointe Coupee north levee in Louisiana.

AUTHORIZATION: Flood Control Acts of 1928, 1941, 1954, and 1958.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 22.2 to 1 at 2-1/2 percent. The benefit to cost ratio is based on all features which comprise the Main Stem system of the Mississippi River and Tributaries project. This project feature of the system was authorized in FY 1955 and initial construction funds were provided in FY 1956. The authorized comprehensive review of the Mississippi River and Tributaries project, contained in House Document 308/88/2, as updated to reflect 1965 conditions and price levels, is considered to be the base estimate for the Main Stem system. The benefit to cost ratio for the Main Stem components computed for the base estimate was 7.9 to 1.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost
Estimated Federal Cost	$301,300,000	
Estimated Non-Federal Costs	0	
Total Estimated Cost	$301,300,000	
Allocations to 30 September 1985	246,866,000	
Conference Allowance for FY 1986	46,000,000	
Allocation for FY 1986	39,605,000 1/	
Allocations to Date	286,471,000	95
Allocation Requested for FY 1987	14,829,000	100
Scheduled Balance to Complete after FY 1987	0	
Unscheduled Balance to Complete after FY 1987	0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	96	November 1986
Low Sill Structure	100	
Overbank Structure	100	
Lock	100	
Auxiliary Structure	94	July 1986
Revetment	75	November 1986

1/ Reflects $6,395,000 reduction assigned as savings and slippage.

Division: Mississippi River Commission

District: New Orleans

Region: Lower Mississippi
Old River, LA

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PHYSICAL DATA

Low-Sill Structure:	Reinforced concrete structure. 11 gate bays each having 44 feet clear width between piers. Weir crest 10.0 feet National Geodetic Vertical Datum, except 3 center bays with weir crest at -5.0 feet National Geodetic Vertical Datum for passing low flows. Total length 566 feet between abutments. Vertical lift steel gates.
Overbank Structure:	Reinforced concrete with hinged timber panel gates. 73 gate bays each having 44 feet clear width between piers. Weir crest 52.0 feet National Geodetic Vertical Datum. Total length, 3,356 feet feet between abutments.
Navigation Lock:	75 feet by 1,200 feet, steel miter gates, sill -11.0 feet National Geodetic Vertical Datum.
Maximum Water Surface Elevation (Lock):	65.0 feet National Geodetic Vertical Datum.
Maximum Discharge Capacity:	During a Mississippi River project flood, the Low Sill and Overbank structures have a combined capacity of about 620,000 cubic feet per second.
Inflow Channel:	0.5 mile long; bottom width, 1,000 feet at -5.0 National Geodetic Vertical Datum (as constructed).
Outflow Channel:	7.0 miles long; bottom width, 900 feet at -9.0 National Geodetic Vertical Datum (as constructed).
Levees:	Approximately 16 miles of enlargement and new levees.
Bank Stabilization:	Approximately 9.8 miles.
Lands and Damages:	12,651 acres.

Auxiliary Control Structure (Under Construction):

Control Structure:	Reinforced concrete structure. 6 gate bays each having 62 feet clear width between piers. Weir crest elevation -5.0 feet National Geodetic Vertical Datum. Total length 442 feet between abutments; steel tainter gates.
Maximum Discharge Capacity:	Maximum Design Discharge: 374,000 feet per second (controlled).
Inflow Channel:	1.9 miles long; bottom width 500 feet at elevation -10.0 National Geodetic Vertical Datum.
Outflow Channel:	0.9 mile long; bottom width 475 feet at elevation -10.0 National Geodetic Vertical Datum.
Levees:	Approximately 4.9 miles of new levee and enlargement.
Bank Stabilization:	Approximately 6.0 miles.
Lands and Damages:	574 acres.

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JUSTIFICATION: The project will prevent the Mississippi River from changing its course to that of the Old and Atchafalaya Rivers. Should this occur, the cities of Baton Rouge and New Orleans and many lesser-size communities would be without sufficient quantities of fresh water to supply their domestic needs during low water periods. The vast industrial complex located from above Baton Rouge to near the river's mouth would be without fresh water which is vital to its operation. The Mississippi River as far upstream as Baton Rouge would become brackish. The investment of the United States in flood control and navigation works would be threatened and a large amount of it lost. The effect would be felt probably as far upstream as Vicksburg on the Mississippi River and Boyce on the Red River as a result of swifter currents and increased meandering. The plan for controlling floods below Old River would require redesigning, and the existing works would require extensive reconstructing. Cities, towns, railroads, highways, waterways, industry, agriculture, and utilities in the Atchafalaya Basin would be subject to partial or complete destruction or serious disruption. The cost of these losses, not including the dislocation and disruption of industry and agriculture, is estimated to be several billion dollars plus an additional average annual maintenance cost of $38,500,000.

The Old River project is one of the Main Stem components which comprise the plan of improvement for the control of floods on the Mississippi River. The contribution of each element to the overall plan is inseparably related to that made by others. Therefore, their benefits are inseparable and a composite benefit to cost ratio for the Main Stem components is necessary. The components are: Mississippi River Levees, Channel Improvement, South Bank Arkansas and South Bank Red River Levees, the Atchafalaya Basin, Old River, and a few miscellaneous items. The benefit to cost ratio was derived by measuring the total benefits credited to these Main Stem components against their total cost. Total average annual benefits for the composite of Main Stem features and designated redevelopment areas applicable to this project are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$2,762,958,000
Navigation	1,349,000,000
Area Redevelopment	15,194,000
Recreation	3,978,000
Total	$4,131,130,000

Redevelopment Areas (Public Law 89-136)

Parish and State	Title	Subsection
Louisiana		
Avoyelles	IV	(2,8)
Concordia	IV	(8)
Pointe Coupee	IV	(1)
St. Landry	IV	(8)

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FISCAL YEAR 1987: The requested amount of $14,829,000 will be applied as follows:

Complete:		
Bank Stabilization for the Auxiliary Control Structure Inflow Channel		$12,303,000
Engineering and Design		90,000
Supervision and Administration		2,436,000
	Total	$14,829,000

The funds requested in FY 1987 will be utilized for completion of the auxiliary structure construction. The construction of the auxiliary structure is required to complete the rehabilitation of the Old River project to insure that it can be operated in conformity with the authorizing law.

NON-FEDERAL COST: Local interests are required to perform minor maintenance on completed levees at an estimated annual cost of $19,800.

STATUS OF LOCAL COOPERATION: The Fifth Louisiana Levee District on 29 October 1928 adopted a resolution assuring the United States that the requirement of local cooperation for levee work along the Mississippi River will be supplied. On 19 November 1980 and 14 January 1981, the levee district appropriated the additional levee rights-of-way and rights-of-entry for construction and realignment of the main line levees to tie in to the auxiliary structure.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $301,300,000 is a decrease of $5,700,000 from the latest estimate ($307,000,000) submitted to Congress. This change includes increases of $124,000 for higher price levels, $201,000 for actual contract awards, $8,286,000 for contract overruns and modifications and $1,223,000 based on more detailed planning of construction and relocations. These increases were offset by decreases of $6,357,000 for actual cost of completed work and $9,177,000 for reduction in contingencies.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The operation and maintenance of the existing Old River project is included in the Environmental Impact Statement for the Atchafalaya Basin Floodway. The final statement was submitted to the Environmental Protection Agency on 20 August 1982. To assess the impacts of the auxiliary control structure, presently under construction, an environmental assessment was prepared in June 1979 and supplemented on 5 March 1981. The assessment concluded that, since there would be no significant changes in project operation and the impacts would be limited to construction activities, the construction would have no significant impact on the human environment and an Environmental Impact Statement would not be required. A finding of No Significant Impact was prepared and is on file in the district office. For future work found necessary, such as inflow and outflow protection works, environmental assessments will be made at the time of implementation to ascertain the need for an Environmental Impact Statement.

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The provisions of Section 404 of the Clean Water Act for the auxiliary structure have been met by a Certification issued by the State of Louisiana on 17 July 1979.

The provisions of Section 404 of the Clean Water Act were met for Turnbull Island revetment by the District Engineer's signature on a Statement of Findings on 28 May 1976.

OTHER INFORMATION: Initial planning funds were appropriated in FY 1955. The first construction funds were appropriated in FY 1956. To complete the rehabilitation of the Old River project, the construction of an auxiliary structure has been initiated. The auxiliary structure will act to insure that the project can be operated in conformity with the authorizing law. Construction of the auxiliary structure began in July 1981. The Phase II, or final, contract is scheduled for completion in July 1986. Revetment work for the auxiliary structure is scheduled for completion in November 1986. The total estimated cost of the auxiliary structure is approximately $216,000,000.

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Old River LA

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Mississippi River Commission
District: New Orleans

Project: Old River, Louisiana

Item	Estimates Presented to Congress ($1,000) Original Baseline	Cumulative Changes	Last	Incremental Change	Current
Federal (Price Level)	70,000 (July 1965)		307,000 1/		301,300 1/
Reason for Change		(237,000) 1/		(-5,700)	
a. Price Escalation		65,174		124	
b. Design Changes		-5,580			
c. Additional Function Added Under General Authorization		745			
d. Authorized Modification		198,450			
e. Post-Contract Award and Other Estimating Adjustments		-21,844		-5,824 2/	
f. Schedule Changes					
g. Sundry		-33			
h. Real Estate		88			

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes increases of $201 for actual contract awards, $8,286 for contract overruns and modifications and $1,223 based on more detailed planning of construction and relocations. Includes decreases of $6,357 for actual cost of completed work and $9,177 for reduction in contingencies.

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APPROPRIATION TITLE
FC,MR&T

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CUD-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
LANDS & DAMAGES	865,000	848,000	17,000	0	0
RELOCATIONS	2,759,000	2,681,000	78,000	0	0
LOCKS	16,348,000	16,348,000	0	0	0
CHANNELS & CANALS	52,289,000	36,768,000	15,521,000	0	0
LEVEES&FLOODWALLS	14,303,000	13,525,000	778,000	0	0
FLD CNTRL + DIV STRU	120,168,000	116,771,000	3,397,000	0	0
BANK STABILIZATION	54,385,000	25,497,000	16,585,000	12,303,000	0
BLDG,GRNDS&UTILITIES	785,000	484,000	301,000	0	0
PERMANENT OPER EQUIP	3,821,000	3,821,000	0	0	0
ENGR & DESIGN	18,894,000	18,156,000	648,000	90,000	0
SUPERVISION & ADMIN	15,703,000	12,159,000	2,108,000	2,436,000	0
FEDERAL FUNDS					
TOTAL COST - SCHED	301,300,000	246,498,000	39,973,000	14,829,000	0
UNDELIVERED ORDERS	0	-346,000	-346,000	0	0
TOTAL OBLIGATIONS	0	246,844,000	39,627,000	14,829,000	0

EFFECTIVE DATE
01 JAN 86

DIVN,MISS. RIVER COMM.
DIST,NEW ORLEANS DISTRICT

REGION, LOWER MISS BASIN,

PROJECT,OLD RIVER CONST

4 FEB 1986

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APPROPRIATION TITLE
FC,M&T

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FEDERAL FUNDS					
ALLOCATIONS		246,[illegible],000	39,695,000(1)		
UNOB CARRYOVER PFY			22,000		
TOTAL AVAIL FOR OBL		0	39,627,000		
APPROPRIATION REQUIRED				14,829,000	0
NON-FED COSTS					
CASH CONTRIB	0				
OTHER COSTS	0				
TOTAL NON-FED COSTS	0				
TOTAL FED(CORPS) & N/F	301,300,000	246,966,000	39,695,000	14,829,000	0

(1) REFLECTS $8,305,000 REDUCTION ASSIGNED AS SAVINGS AND SLIPPAGE.

EFFECTIVE DATE 01 JAN 86

DIVN,MISS. RIVER COMM.
DIST,NEW ORLEANS DISTRICT

REGION, LOWER MISS
BASIN,

PROJECT,OLD RIVER CONST

4 FEB 1986 1054

APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO, and TN - Construction

PROJECT: Atchafalaya Basin, Louisiana (Continuing)

LOCATION: The project is located in south-central Louisiana below the latitude of Old River and west of and generally paralleling the Mississippi River. The basin floodway is approximately 110 miles long by 15 miles wide. The Atchafalaya River flows through the middle of the basin.

AUTHORIZATION: Flood Control Acts of 1928, 1934, 1936, 1938, 1941, 1946, 1950, and 1954.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 22.2 to 1 at 2-1/2 percent. The benefit to cost ratio is based on all features which comprise the main stem of the Mississippi River and Tributaries project. This project feature of the system was authorized in FY 1928 and initial construction funds were provided in FY 1928. The authorized comprehensive review of the Mississippi River and Tributaries project, contained in House Document 308/88/2, as updated to reflect 1965 conditions and price levels, is considered to be the base estimate for the Main Stem system. The benefit-to-cost ratio for the Main Stem components computed for the base estimate was 7.9 to 1.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Federal Cost		$1,433,000,000	
Estimated Non-Federal Cost		11,000,000	
Cash Contribution	3,000,000		
Other	8,000,000		
Total Estimated Project Cost		$1,444,000,000	
Allocations to 30 September 1985		503,512,000	
Conference Allowance for FY 1986		26,300,000	
Allocation for FY 1986		23,870,000 1/	
Allocations to Date		527,382,000	37
Allocation Requested for FY 1987		35,600,000	39
Scheduled Balance to Complete after FY 1987		870,018,000	
Unscheduled Balance to Complete after FY 1987		0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	70	September 2010

1/ Reflects $2,430,000 reduction assigned as savings and slippage.

Division: Mississippi River Commission District: New Orleans Region: Lower Mississippi Atchafalaya Basin, LA

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PHYSICAL DATA

Levees:
- Average Height - 20 feet
- Length - 449 miles

Relocations:
- Roads - 15 miles
- Railroads - 20 miles

Drainage Structures:

Pointe Coupee	2 gates, 10.5 by 15 feet
Melville	2 - 72-inch corrugated metal pipe with vertical lift gate
Darbonne	10-foot by 10-foot barrel with vertical lift gate
Bayou des Glaises	72-inch corrugated metal pipe with flap gate
Bayou Courtableau	2 weirs, 503 feet long
Brushy Bayou	5-foot by 6-foot barrel with vertical lift gate
Bayou Courtableau	5-barrel, each 10 feet by 15 feet with vertical lift gate
Wax Lake East	25 pipes, 5 feet in diameter with slide gates
Wax Lake West	15 pipes, 5 feet in diameter with slide gates

Lands and Damages:
354,019 acres

Pumping Stations:
- Number - 11
- Capacity - Minimum - 50 cubic feet per second
  Maximum - 1,500 cubic feet per second
  Average - 400 cubic feet per second

Bank Stabilization:
- Length - 58 miles

Floodgates:
- Charenton - Sector-gated, 45 feet wide
- East Calumet - Sector-gated, 45 feet wide
- West Calumet - Sector-gated, 45 feet wide

Channels:
- Length: 147.1 miles

Locks:
- Bayou Boeuf, 75 feet by 1,156 feet, earth chamber
- Bayou Sorrel, 56 feet by 797 feet, earth chamber
- Berwick, 45 feet by 300 feet, concrete chamber

Atchafalaya River Navigation:
- New Channel 10.1 miles

Freshwater Control Structure:
- Sherburne - dual 10-foot by 10-foot reinforced concrete box culverts with gates
- Henderson - dual 10-foot by 10-foot reinforced concrete box culverts with gates

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FISCAL YEAR 1987: The requested amount of $35,600,000 will be applied as follows:

Initiate:	
E44 Levee Enlargement	$ 600,000
Wax Lake Outlet Control	700,000
W46 Levee Enlargement	1,600,000
W52 Levee Enlargement	1,000,000
E96 Sheetpile	5,400,000
E22 Levee Enlargement	3,000,000
E28 Levee Enlargement	5,300,000
W123 Sheet Pile and Levee Enlargement	1,468,000
Initiate and Complete:	
E84 3rd Lift	85,000
Continue:	
Lands and Damages	500,000
Complete:	
W58 Levee Enlargement	1,735,000
E52 Floodwall	553,000
Morgan City Floodwall North	584,000
W68 Levee Enlargement	2,711,000
E99 Sheetpile	150,000
W61 Levee Enlargement	2,340,000
Surveys and Layouts	673,000
Engineering and Design	5,171,000
Supervision and Administration	2,030,000
Total	$35,600,000

The funds requested are to be used to raise the most deficient sections of levee and floodwalls thereby increasing the capacity of the floodway. The increase in height also reduces the length of levee on which temporary flood fight measures must be constructed during threat of flood. The added security provided by continued construction contributes greatly to the economy of the areas protected. The funds requested are the minimum necessary to meet the presently scheduled completion dates.

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JUSTIFICATION: The Mississippi River below Morganza Floodway is capable of carrying 1,500,000 cubic feet per second without threatening the integrity of the levees along its banks which protect densely populated areas, highly developed agricultural lands, industries, and the city of New Orleans, as well as a number of lesser populated communities. Studies indicate that the project flood against which the flood control protection works are designed will be of such magnitude that 3,000,000 cubic feet per second will pass the latitude of Old River. Since the Mississippi River below the Morganza Floodway can carry only one-half this amount, the other one-half must be diverted from the main channel. The diversion is made through the Old River Control Structure and the Atchafalaya River, and through the Morganza and West Atchafalaya Floodways. In order to prevent diverted waters from spreading over the rich and highly developed agricultural lands outside of the Atchafalaya Basin, these rivers and floodways have been leveed to confine the diverted flow. In order to eliminate unnecessary damage, it is essential that the work proceed as vigorously and as expeditiously as possible. This floodway system is, for all practical purposes, a part of the main river system, inasmuch as the integrity of the main river system depends upon its utilization. Since this construction began, people have developed farms and industries in the areas adjacent to the floodway with full confidence that they would receive protection. Therefore, overtopping or crevassing of the levees would cause far more damage than anticipated at the start of project construction. The main protection levees in the lower reaches are deficient because of consolidation of the soft underlying soils, especially those below the latitude of Krotz Springs. Early construction of these levees to the approved grade is essential, not only for flood protection, but as a means of access for the movement of manpower and equipment to any spot threatened by floods.

The Atchafalaya Basin project, authorized in 1928, is one of the Main Stem components which comprise the plan of improvement for the control of floods on the Mississippi River. The contribution of each element to the overall plan is inseparably related to that made by the others. Therefore, their benefits are inseparable and a composite benefit to cost ratio for the Main Stem components is necessary. The components are: Mississippi River Levees, Channel Improvement, South Bank Arkansas and South Bank Red River Levees, the Atchafalaya Basin, Old River, and a few miscellaneous items. The benefit to cost ratio was derived by measuring the total benefits credited to these Main Stem components against their total cost. Total average annual benefits for the composite of Main Stem features and designated redevelopment areas applicable to this project are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$2,762,958,000
Navigation	1,349,000,000
Area Redevelopment	15,194,000
Recreation	3,978,000
Total	$4,131,130,000

Redevelopment Area (PL-89-136)		
State and Parish	Title	Subsection
Louisiana		
Ascension	IV	(8)
Assumption	IV	(8)
Avoyelles	IV	(2,8)
Iberville	IV	(1)
Pointe Coupee	IV	(1)
St. Landry	IV	(8)
St. Martin	IV	(8)
West Baton Rouge	IV	(8)

Atchafalaya Basin, LA

4 FEB 1988

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NON-FEDERAL COST: Local interests are required to provide 50 percent of the total first cost of recreation facilities, land for recreation sites, and additional drainage facilities in the Upper Pointe Coupee Loop Area. Local interests have also expended funds for real estate negotiations, purchases of maintenance equipment, inspection and patrol of levees, and other items. The non-Federal costs are broken down as follows:

Lands and Damages (Recreation)	$ 247,000
Additional Drainage Facilities - Upper Pointe Coupee	6,643,000
Miscellaneous Levee Work (Completed)	1,110,000
Cash Contribution (Recreation)	3,000,000
Total	$11,000,000

In addition, local interests are required to perform minor maintenance on completed levees at an estimated annual cost of approximately $1,182,000.

STATUS OF LOCAL COOPERATION: Necessary assurances for maintaining the project have been furnished by the Atchafalaya Basin Levee District; Red River, Atchafalaya and Bayou Boeuf Levee District; St. Mary Parish Police Jury; Pointe Coupee Parish Police Jury; and the towns of Berwick and Morgan City, LA. These agencies are furnishing all requirements of local cooperation necessary for meeting present project schedules.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $1,433,000,000 is a decrease of $30,000,000 from the latest estimate ($1,463,000,000) submitted to Congress. This change includes increases of $6,153,000 based on adjustments in the estimated inflation allowance through the construction period and $3,502,000 for contract modifications and overruns. These increases were more than offset by decreases of $246,000 in Lands and Damages due to a recent reanalysis of requirements; $282,000 based on actual contract cost; $8,397,000 for contract awards; $30,238,000 based on more detailed planning of relocation and construction features; and $271,000 in Engineering and Design and $221,000 in Supervision and Administration based on a recent reanalysis of requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The draft Environmental Impact Statement was submitted to the Environmental Protection Agency in June 1981. The final statement was submitted to the Environmental Protection Agency on 20 August 1982. The final Environmental Impact Statement for the Upper Pointe Coupee Loop Area was filed with the Council on Environmental Quality on 11 June 1976.

The provisions of Section 404 of the Clean Water Act for all project features of the Atchafalaya Basin project except levees and floodwalls, bank stabilization, and Upper Pointe Coupee Loop Area will be met by acquisition of State of Louisiana Water Quality Certificates.

The provisions of Section 404 of the Clean Water Act for work in the levees and floodwalls feature have been met for FY 1987 work by the District Engineer's signature on a Statement of Findings on 5 July 1975.

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The provisions of Section 404 of the Clean Water Act for bank stabilization were met by the District Engineer's signature on a Statement of Findings on 25 May 1976.

The provisions of Section 404 of the Clean Water Act for the Upper Pointe Coupee Loop Area were met by a certification from the State of Louisiana on 1 April 1980.

OTHER INFORMATION: Funds to initiate construction were appropriated in 1928.

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4 FILE COPY 1060 Atchafalaya Basin, LA

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Mississippi River Commission Project: Atchafalaya Basin, Louisiana
District: New Orleans

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	284,000 (July 1965)		1,463,000 4/		1,433,000 3/ 4/
Reason for Change		(1,179,000) 4/		(-30,000) 3/	
a. Price Escalation		732,795		6,908	
b. Design Changes		356,714		-30,730 1/	
c. Additional Function Added Under General Authorization					
d. Authorized Modification		92,422			
e. Post-Contract Award and Other Estimating Adjustments		-22,421		-5,423 2/	
f. Schedule Changes					
g. Sundry		2,473			
h. Real Estate		17,017		- 755	

1/ Decreased due to more detailed planning of construction and relocations.
2/ Increased $3,502 due to contract modifications and overruns. Decreased $246 for Lands and Damages based on a recent reanalysis of requirements, $282 based on actual contract cost, and $8,397 for actual contract awards.
3/ Includes an increase of $6,153 for adjustments in the estimated inflation allowance through the construction period.
4/ Includes an allowance for estimated inflation through the construction period.

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APPROPRIATION TITLE
FC,MR&T

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CUB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
ATCHAF. RV. NA	304,000	304,000	0	0	0
LANDS & DAMAGES	33,941,000	10,801,000	294,000	500,000	22,346,000
RELOCATIONS	87,849,000	22,272,000	1,381,000	1,252,000	62,144,000
LOCKS	34,616,000	6,572,000	0	0	28,044,000
FISH AND WILDLIFE	7,715,000	0	0	0	7,715,000
ROADS(INCL BRIDGES)	625,000	625,000	0	0	0
CHANNELS & CANALS	123,117,000	45,470,000	0	0	77,647,000
LEVEES&FLOODWALLS	722,721,000	234,987,000	15,973,000	26,647,000	445,114,000
PUMPING PLANTS	21,115,000	16,383,000	336,000	0	4,396,000
RECREATION FAC.	6,468,000	0	0	0	6,468,000
FLD CNTRL + DIV STRU	15,000	15,000	0	0	0
BANK STABILIZATION	189,693,000	68,756,000	0	0	120,937,000
CULTURAL RES.	114,000	40,000	0	0	74,000
BLDG,GRNDS&UTILITIES	14,000	14,000	0	0	0
ENGR & DESIGN	115,228,000	63,388,000	4,939,000	5,171,000	41,730,000
SUPERVISION & ADMIN	93,265,000	33,840,000	1,800,000	2,030,000	56,395,000
FED AND NON-FED					
TOTAL COST - SCHED	1,436,000,000	502,659,000	24,723,000	35,600,000	873,018,000
UNDELIVERED ORDERS	0	853,000	-853,000	0	0
TOTAL OBLIGATIONS	0	503,512,000	23,870,000	35,600,000	873,018,000
FEDERAL FUNDS					
TOTAL COST - SCHED	1,433,000,000	502,659,000	24,723,000	35,600,000	870,018,000
UNDELIVERED ORDERS	0	853,000	-853,000	0	0
TOTAL OBLIGATIONS	0	503,512,000	23,870,000	35,600,000	870,018,000
NON-FEDERAL FUNDS					
TOTAL COST - SCHED	3,000,000	0	0	0	3,000,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	0	0	3,000,000

EFFECTIVE DATE 01 JAN 86

DIVN,MISS. RIVER COMM.
DIST,NEW ORLEANS DISTRICT

REGION, LOWER MISSISSIPPI
BASIN,

PROJECT,ATCHAFALAYA BASIN
CONST

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4 FEB 1986

APPROPRIATION TITLE
FC,PR&T

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CUB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FED AND NON-FED					
ALLOCATIONS		503,512,000	23,870,000		
UNOB CARRYOVER PFY					
TOTAL AVAIL FOR OBL		0	23,870,000		
APPROPRIATION REQUIRED				35,600,000	873,018,000
FEDERAL FUNDS					
ALLOCATIONS		503,512,000	23,870,000(1)		
UNOB CARRYOVER PFY					
TOTAL AVAIL FOR OBL		0	23,870,000		
APPROPRIATION REQUIRED				35,600,000	870,018,000
				FUTURE FEDERAL REQUIREMENTS	
				FISCAL YEAR 1988	37,600,000
				FISCAL YEAR 1989	39,000,000
				FISCAL YEAR 1990	42,000,000
				FISCAL YEAR 1991	37,000,000
				REMAINING BALANCE	714,418,000
NON-FEDERAL FUNDS					
CONTRIBUTIONS		0	0		
UNOB CARRYOVER PFY					
TOTAL AVAIL FOR OBL		0	0		
CONTRIBUTION REQUIRED				0	3,000,000
				FUTURE NON-FED REQUIREMENTS	
				FISCAL YEAR 1988	0
				FISCAL YEAR 1989	0
				FISCAL YEAR 1990	0
				FISCAL YEAR 1991	3,000,000
				REMAINING BALANCE	0

(1) REFLECTS $2,430,000 REDUCTION ASSIGNED AS SAVINGS AND SLIPPAGE.

EFFECTIVE DATE 01 JAN 86 | DIVN,MISS. RIVER COMM, DIST,NEW ORLEANS DISTRICT | REGION, LOWER MISSISSIPPI BASIN, | PROJECT,ATCHAFALAYA BASIN CONST

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4 FEB 1986

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CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS	3,000,000	0	0	0	3,000,000
OTHER COSTS					
LANDS & DAMAGES	247,000	0	0	0	247,000
OTHER					
INT. DR. SYS. LOCAL INTEREST & SCS.	6,643,000	0	0	0	6,643,000
R/E NEG., MAINT. EQUIP. INS. & PATROL LEVEES	1,110,000	1,110,000			
TOTAL NON-FED. COSTS	11,000,000	1,110,000	0	0	9,890,000
TOTAL FED. (CORPS) & NON-FED.	1,444,000,000	504,622,000	23,870,000	35,600,000	879,908,000

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EFFECTIVE DATE 01 JAN 86 | DIVN, MISS. RIVER COMM. DIST, NEW ORLEANS DISTRICT | REGION, BASIN, LOWER MISSISSIPPI | PROJECT, ATCHAFALAYA BASIN CONSTRUCTION

4 FEB 1986 1064

APPROPRIATION TITLE: Flood Control, Mississippi River & Tributaries, AR, IL, KY, LA, MS, MO, and TN - Construction

PROJECT: Atchafalaya Basin Floodway System, Louisiana (Continuing)

LOCATION: The project is located in south-central Louisiana below the latitude of Old River and west of and generally paralleling the Mississippi River. The basin floodway is approximately 110 miles long by 15 miles wide. The Atchafalaya River flows through the middle of the basin.

AUTHORIZATION: Supplemental Appropriations Act, 1985

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 22.2 to 1 at 2-1/2 percent. The benefit to cost ratio is based on all features which comprise the Main Stem system of the Mississippi River and Tributaries project.

The authorized comprehensive review of the Mississippi River and Tributaries project, contained in House Document 308/88/2, as updated to reflect 1965 conditions and price levels, is considered to be the base estimate for the Main Stem system. The benefit to cost ratio for the Main Stem components computed for the base estimate was 7.9 to 1.

SUMMARIZED FINANCIAL DATA

Estimated Federal Cost			$131,875,000
Scheduled Construction		26,230,000	
Unscheduled Construction		105,645,000	
Estimated Non-Federal Cost			133,125,000
Scheduled Construction		0	
Cash Contribution	0		
Other Costs	0		
Unscheduled Construction		133,125,000	
Cash Contribution	22,109,000		
Other Costs	111,016,000		
Total Estimated Scheduled Construction Cost			26,230,000
Total Estimated Unscheduled Construction Cost			238,770,000
Total Estimated Project Cost			265,000,000

		Accum. % of Est. Fed. Cost
Allocations to 30 September 1985	450,000	
Conference Allowance for FY 1986	0	
Potential Allocation for FY 1986	0	
Potential Allocations through FY 1986	450,000	0.3
Allocation Requested for FY 1987	970,000	1.0
Scheduled Balance to Complete after FY 1987	24,810,000	
Unscheduled Balance to Complete after FY 1987	105,645,000	

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STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	0	Indef 1/

PHYSICAL DATA

Lands & Damages: 595,000 acres
Relocations: 2 Pipelines
Recreations Facilities: 3 campgrounds - destination type
7 campgrounds- primitive type

15 boat-launching ramps

Channels & Canals &
Levees and Floodwalls: 5 Fish and Wildlife enhancement management units

1/ Planning and engineering work necessary to detail the acquisition of additional recreation lands, flowage and environmental easements and public access acreage; and authorized recreational development have not been scheduled. These project features will be considered for construction consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

3 FEB 1988 1066

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JUSTIFICATION: The Atchafalaya Basin Floodway System features result from a comprehensive study with a view to developing a plan for the management and preservation of the water and related land resources of the Atchafalaya River Basin, Louisiana, which would include provisions for reductions of siltation, improvement of water quality; and possible improvements of the area for commercial and sport fishing. The features of the Atchafalaya Basin Floodway System are compatible with the current flood control plan, and include real estate acquisition of developmental easements over privately owned land in the floodway south of Krotz Springs, Louisiana, to ensure unhampered use of the floodway during major floods and environmental easements over the same land to protect the basin's environmental resources. Provision of additional public access and several campgrounds, boat launching ramps, and other recreational facilities are also included to allow public enjoyment of the area's unique environmental values. The system management unit feature involves making use of distinct hydrologics within the floodway to restore historical overflow conditions and thereby enhance aquatic ecosystem productivity. The total average annual benefits for the components of Main Stem features and designated redevelopment areas applicable to this project are as follows:

Benefits	Amount (1 October 1985)	Redevelopment Area (PL-89-136) State and Parish	Title	Subsection
		Louisiana		
Flood Control	$2,762,958,000	Ascension	IV	(8)
Navigation	1,340,000,000	Assumption	IV	(8)
Area Redevelopment	15,194,000	Avoyelles	IV	(2,8)
Recreation	3,978,000	Iberville	IV	(1)
		Pointe Coupee	IV	(1)
Total Annual Benefits	$4,131,130,000	St. Landry	IV	(8)
		St. Martin	IV	(8)
		West Baton Rouge	IV	(8)

FISCAL YEAR 1987: The requested amount of $970,000 will be applied as follows:

Engineering and Design	$900,000
Supervision and Administration	70,000
Total	$970,000

The funds requested will be utilized to prepare a Real Estate Design Memorandum and initiate the General Design Memorandum for the management units.

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NON-FEDERAL COST: There is no non-Federal cost associated with the presently scheduled work; however, unscheduled features will be cost shared consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

STATUS OF LOCAL COOPERATION: Assurances for the project, consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, will be obtained for the unscheduled features prior to the initiation of construction.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $131,875,000 is a decrease of $44,925,000 from the latest estimate ($176,800,000) submitted to Congress. This change includes decreases of $55,725,000 based on adjustments between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, partially offset by increases of $10,800,000 due to higher price levels.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The draft Environmental Impact Statement was submitted to the Environmental Protection Agency in June 1981. The final statement was submitted to the Environmental Protection Agency on 20 August 1982.

The provisions of Section 404 of the Clean Water Act for all features of the Atchafalaya Basin Floodway System project will be met by acquisition of State of Louisiana Water Quality Certificates.

OTHER INFORMATION: Funds to initiate construction were appropriated in FY 1985.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Mississippi River Commission
District: New Orleans

Project: Atchafalaya Basin Floodway System, Louisiana

Item	Original Baseline (1)	Estimates Presented to Congress ($1,000) Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	176,800 (Oct 83)		176,800 (Oct 83)		131,875 1/
Reason for Change		0		(-44,925) 1/	
a. Price Escalation		0		5,562	
b. Design Changes		0		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimating Adjustments		0		0	
f. Schedule Changes		0		0	
g. Sundry		0		-55,725 2/	
h. Real Estate		0		5,238	

1/ Includes an allowance for estimated inflation from 1 October 1985 through the construction period.
2/ Decreased $55,725,000 based on adjustments between Federal and non-Federal costs estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

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APPROPRIATION, TITLE
FC,MR&T,AR,IL,KY,LA,MO,MS,&TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CUB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
SCHEDULED WORK	26,230,000	0	450,000	970,000	24,810,000
LANDS & DAMAGES	24,810,000	0	0	0	24,810,000
ENGINEERING & DESIGN	1,317,000	0	417,000	900,000	0
SUPERVISION & ADMIN	103,000	0	33,000	70,000	0
UNSCHEDULED WORK	238,770,000	0	0	0	238,770,000
LANDS & DAMAGES	183,572,000	0	0	0	183,572,000
RELOCATIONS	52,000	0	0	0	52,000
CHANNELS & CANALS	27,600,000	0	0	0	27,600,000
LEVEES & FLOODWALLS	1,557,000	0	0	0	1,557,000
RECREATIONS FAC.	18,778,000	0	0	0	18,778,000
ENGINEERING & DESIGN	2,950,000	0	0	0	2,950,000
SUPERVISION & ADMIN	4,253,000	0	0	0	4,253,000
TOTAL PROJECT	265,000,000	0	450,000	970,000	263,580,000
FED AND NON-FED					
TOTAL COST - SCHED	265,000,000	0	450,000	970,000	263,580,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	450,000	970,000	263,580,000
FEDERAL FUNDS					
TOTAL COST - SCHED	131,875,000	0	450,000	970,000	130,455,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	450,000	970,000	130,455,000
NON-FEDERAL FUNDS					
TOTAL COST - SCHED	133,125,000	0	0	0	133,125,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	0	0	133,125,000

EFFECTIVE DATE 01 JAN 86

DIVN,MISS. RIVER COMM.
DIST,NEW ORLEANS DISTRICT

REGION, LOWER MISSISSIPPI
BASIN,

PROJECT,ATCH. BASIN FLOODWAY SYSTEM

4 FEB 1986 1070

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APPROPRIATION TITLE
FC,MR&T,AR,IL,KY,LA,MO,MS,&TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FED AND NON-FED					
ALLOCATIONS		0	0		
UNOB CARRYOVER PFY			450,000		
TOTAL AVAIL FOR OBL			450,000		
APPROPRIATION REQUIRED				970,000	263,530,000
FEDERAL FUNDS					
ALLOCATIONS		450,000	0		
UNOB CARRYOVER PFY			450,000		
TOTAL AVAIL FOR OBL			450,000		
APPROPRIATION REQUIRED				970,000	130,455,000
FUTURE FEDERAL REQUIREMENTS					
FISCAL YEAR 1988					2,500,000
FISCAL YEAR 1989					2,500,000
FISCAL YEAR 1990					2,500,000
FISCAL YEAR 1991					2,500,000
REMAINING BALANCE					116,455,000
NON-FEDERAL FUNDS					
CONTRIBUTIONS		0	0		
UNOB CARRYOVER PFY					
TOTAL AVAIL FOR OBL		0	0		
CONTRIBUTION REQUIRED				0	133,125,000
FUTURE NON-FED REQUIREMENTS					
FISCAL YEAR 1988					0
FISCAL YEAR 1989					0
FISCAL YEAR 1990					0
FISCAL YEAR 1991					0
REMAINING BALANCE					133,125,000

EFFECTIVE DATE

DIVN,MISS. RIVER COMM.
DIST,NEW ORLEANS DISTRICT

REGION, LOWER MISSISSIPPI
BASIN.

PROJECT,ATCH. BASIN FLOODWAY
SYSTEM

4 FEB 1986

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01 JAN 86

PAGES

APPROPRIATION TITLE
FC,MR&T,AR,IL,KY,LA,MO,MS,&TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS	22,109,000	0	0	0	22,109,000
OTHER COSTS	111,016,000	0	0	0	111,016,000
TOTAL NON-FEDERAL COSTS	133,125,000	0	0	0	133,125,000
TOTAL FEDERAL (CORPS) & NON-FEDERAL COSTS	265,000,000	0	450,000	979,000	263,589,000

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EFFECTIVE DATE | DIVN,MISS. RIVER COMM. DIST,NEW ORLEANS DISTRICT | WALL REGION, LOWER MISSISSIPPI BASIN, COASTAL LOUISIANA | PROJECT,ATCH. BASIN FLOODWAY

4 FEB 86 1078

APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO and TN - Construction

PROJECT: St. Francis Basin, Arkansas and Missouri (Continuing)

LOCATION: The project is located in the St. Francis Basin in southeastern Missouri and northeastern Arkansas, and extends from the hills southwest of Cape Girardeau, Missouri, near Wappapello, Missouri, to the confluence of the St. Francis and Mississippi Rivers about 10 miles above Helena, Arkansas.

AUTHORIZATION: Flood Control Acts of 1928, 1936, 1938, 1941, 1944, 1946, 1950, 1958, 1965, and 1968 and Water Resources Development Act of 1974.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 2.7 to 1 at 2-1/2 percent. The benefit to cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1965) was 2.4 to 1. The benefit to cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

		Accum. % of Est. Fed. Cost
Estimated Federal Cost	$361,000,000	
Estimated Non-Federal Cost	1,906,000	
Cash Contribution $ 293,000		
Other Costs 1,613,000		
Total Estimated Project Cost	$362,906,000	
Allocations to 30 September 1985	$239,763,000	
Conference Allowance for FY 1986	7,200,000	
Allocation for FY 1986	7,200,000	
Allocations to Dat-	246,963,000	68
Allocation Requested for FY 1987	9,200,000	71
Scheduled Balance to Complete After FY 1987	104,837,000	
Unscheduled Balance to Complete After FY 1987	0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	78	Jan 1999
Big Slough and Mayo Ditch	100	
Little River Drainage	82	Feb 1998
Wappapello Lake	100	
St. Francis River and Tributaries	78	Jan 1999

Division: Mississippi River Commission District: Memphis Region: Lower Mississippi
St. Francis Basin, Arkansas and Missouri

4 FEB 1986

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PHYSICAL DATA

Levees:
Average Height - 11.7 feet
Length - 438.0 miles

Channels:
St. Francis River and Tributaries - 603.4 miles
Little River Drainage - 291.0 miles
Big Slough and Mayo Ditches - 28.0 miles

Pumping Plants:
1 - 25 cubic feet per second
1 - 12,000 cubic feet per second
1 - 700 cubic feet per second

Relocations:
Roads - 21.3 miles and 265 bridges
Railroads - 39 bridges

Dam and Reservoir: 1 - Dam

Flood Control and Diversion Structures: 8

Lands and Damages: 187,429 acres

Other: 1 - Syphon

JUSTIFICATION: The project is a single-purpose flood control project and is a unit in the Comprehensive Plan for Flood Control, Mississippi River and Tributaries. Protection against headwater floods of the St. Francis and Little Rivers will be afforded to an area of approximately 1,436,855 acres of agricultural lands and including numerous small towns, several major railroads, highways, and utilities, located in Missouri and Arkansas. The construction of adequate outlets for the many drainage improvements undertaken by local interests will provide relief from overflow on approximately 196,700 acres in the Little River Basin, 29,000 acres in the Elk Chute Basin, and 35,000 acres in the Big Slough area. In addition, relief from flooding by backwaters of the Mississippi River is afforded to approximately 532,000 acres in the Lower St. Francis Basin below the latitude of St. Francis Lake by the Madison to Marianna Cutoff and related work including the pumping plant. Flooding has occurred every year with few exceptions, and the flood of record occurred in 1937 causing numerous breaks in the locally constructed substandard levees with resultant damages of over $2,000,000. It is estimated that the recurrence of the 1937 flood, under present conditions of development in the floodplain, would cause damages of over $52,000,000 if the flood occurred during the crop growing season. Continuing construction of this project is needed to prevent recurring flood losses. Project benefits will result from flood damages prevented, increased utilization of land, and fish and wildlife enhancement. Total average annual benefits and designated redevelopment areas follow:

1 FEB 74

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Benefits	Amount (1 October 1985)
Flood Control	$60,608,000
Recreation	2,152,000
Fish and Wildlife	333,000
Area Redevelopment	820,000
Advance Replacement	690,000
Betterments	116,000
Relocation Assistance	26,000
Total	$64,745,000

Redevelopment Areas (PL 89-136)

State and County	Title	Subsection
Arkansas:		
Clay	IV	(2,8)
Craighead	IV	(6)
Crittenden	IV	(8)
Cross	IV	(2)
Greene	IV	(2,8)
Lee	IV	(2,7,8)
Mississippi	IV	(8)
Phillips	IV	(2,8)
Poinsett	IV	(8)
St. Francis	IV	(2)
Woodruff	IV	(2,8)

State and County	Title	Subsection
Missouri:		
Bollinger	IV	(2,7)
Butler	IV	(8)
Dunklin	IV	(2)
Iron	IV	(8)
Mississippi	IV	(1,2)
New Madrid	IV	(2)
Pemiscot	IV	(8)
St. Francis	IV	(8)
Scott	IV	(6)
Washington	IV	(8)
Wayne	IV	(2,7,8)

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FISCAL YEAR 1987: The requested amount of $9,200,000 will be applied as follows:

ST. FRANCIS RIVER AND TRIBUTARIES

Initiate:	
State Bridge, Belle Fountain Ditch, Mile 5.64	$ 20,000
County Bridge, Blackfish Bayou, Item 3, Mile 26.59	165,000
County Bridge, Blackfish Bayou, Item 3, Mile 27.70	140,000
Railroad Bridge, Oak Donnick Floodway	500,000
Township Bridge, Upper Buffalo Creek, Mile 35.80	150,000
Upper Buffalo Creek, Cleanout, Item 2	100,000
Big Creek, Item 2, Parcel 2	400,000
Initiate and Complete:	
County Bridge, Honey Cypress Creek, Mile 4.55	101,000
County Bridge, Honey Cypress Creek, Mile 5.18	102,000
Township Bridge, Honey Cypress Creek, Mile 8.92	83,000
Township Bridge, Honey Cypress Creek, Mile 10.05	116,000
County Bridge, Ditch 29, Mile 6.35	103,000
Continue:	
Miscellaneous Utilities	222,000
Lands and Damages	1,150,000

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FISCAL YEAR 1987: (CONT'D)

Complete:	
State Line Outlet	1,436,000
2 State Bridges, MO, Upper Buffalo, Miles 31.88 & 35.10	1,024,000
Upper Buffalo Creek, Cleanout, Item 1	644,000
1 State Bridge, Ditch 29, Mile 3.36	335,000
1 State Bridge, Ditch 29, Mile 5.06	54,000
Engineering and Design	980,000
Supervision and Administration	605,000
Subtotal	$8,430,000

The bridge work stated above must be completed before the authorized channel enlargements can be accomplished. Funds will permit work on four channel enlargement items which will provide flood relief to thousands of acres of valuable cropland in both Arkansas and Missouri.

LITTLE RIVER DRAINAGE:

Initiate and Complete:	
Castor River, Item 2, Parcel 1	$ 200,000
Continue:	
Lands and Damages	100,000
Miscellaneous Utilities	20,000
Engineering and Design	300,000
Supervision and Administration	150,000
SUBTOTAL	$ 770,000

These funds will permit the construction of one channel item and continuation of planning and design and land acquisition for future authorized channel work. Construction of this parcel of the Castor River will improve drainage to approximately 115,000 acres.

TOTAL	$9,200,000

St. Francis Basin, Arkansas and Missouri

1077

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NON-FEDERAL COST: The requirement of local interests is limited to minor maintenance of levees and furnishing of lands and easements for recreation facilities at W. G. Huxtable Pumping Plant; construction of the Inter-River Drainage Culvert and the St. Francis Lake Control Structure; and, contributing 6.4 percent of the total cost of fish and wildlife measures in the Big Lake area. The non-Federal costs are broken down as follows:

Lands and Damages	$1,492,000
Relocations	121,000
Fish and Wildlife Measures (Cash Contributions)	208,000
Recreation Facilities (Cash Contributions)	85,000
TOTAL	$1,906,000

The estimated annual cost to local interests for minor maintenance is $930,000.

STATUS OF LOCAL COOPERATION: Necessary assurances have been furnished by 24 levee and drainage districts to perform minor maintenance as required by law. These assurances are being complied with for all levees completed to date.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $361,000,000 is a decrease of $8,000,000 from the latest estimate ($369,000,000) submitted to Congress. This change includes increases of $153,000 for Engineering and Design based on a recent reanalysis of requirements and $35,000 based on actual cost of completed work. These increases were offset by decreases of $159,000 for Lands & Damages and $88,000 for Supervision and Administration based on a recent reanalysis of requirements; $23,000 based on actual contract amount; and $5,035,000 based on more detailed planning of construction and relocations and $2,883,000 for adjustments in the estimated inflation allowance through the construction period.

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STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was filed with the Council on Environmental Quality on 11 December 1973.

The provisions of Section 404 of the Clean Water Act will be followed as detailed plans for individual work items are developed. Schedule for compliance with Section 404 requirements for items to be initiated in FY 1987 is as follows:

Item	Preliminary Evaluation	Issuance of Public Notice	State Certification	Date of Signature by District Engineer on Report
County Bridge, Honey Cypress Creek, AR, Mile 4.55	N/A	Aug 86	Oct 86	Oct 86
County Bridge, Honey Cypress Creek, AR, Mile 5.18	N/A	Apr 86	Jun 86	Jul 86
Township Bridge, Honey Cypress Creek, AR, Mile 8.92	N/A	Apr 86	Jun 86	Jul 86
Township Bridge, Honey Cypress Creek, AR, Mile 10.05	N/A	May 86	Aug 86	Aug 86
Item 2, Big Creek, Parcel 2	N/A	21 Jul 80	10 Oct 80	5 Apr 82
Railroad Bridge, Oak Donnick Floodway	N/A	N/A	N/A	N/A
Upper Buffalo Creek, Item 2, MO	N/A	4 May 81	6 Oct 81	6 Nov 81
Township Bridge, Upper Buffalo Creek, Mile 35.80	N/A	4 May 81	6 Oct 81	6 Nov 81
State Bridge, Belle Fountain Ditch, Mile 5.64	N/A	May 86	Aug 86	Aug 86
County Bridge, Blackfish Bayou, Item 3, Mile 26.59	N/A	Aug 86	Oct 86	Oct 86
County Bridge, Blackfish Bayou, Item 3, Mile 27.70	N/A	Sep 86	Nov 86	Nov 86
County Bridge, Ditch 29, Mile 6.35	N/A	5 Jul 85	Jun 86	Jun 86
Item 2, Castor River, Parcel 1	N/A	1 Aug 85	20 Sep 85	20 Sep 85

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OTHER INFORMATION: Initial construction funds were appropriated in FY 1938.

Payment for Flood Damages Arising from May-June 1983 Malfunction and Subsequent Operation of the W. G. Huxtable Pumping Plant - St. Francis Basin, Arkansas and Missouri:

Senate Report 98-570, page 34: "In May 1983, equipment malfunctions and operational difficulties at the Corps of Engineers' W. G. Huxtable Pumping Station in Arkansas contributed to the severe flooding and damages of farmland, crops, and structures in the vicinity of Marianna, Arkansas. Because legal action by local interests is precluded, the Committee has included a provision in the bill to pay for the damages experienced. In providing not to exceed $2,000,000, the Committee directs the Corps of Engineers to work closely with the local interests and representatives of the Department of Agriculture to determine eligibility to settle claims for damages incurred."

Conference Report 98-977, page 18: "The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate Appropriating $2,000,000 to pay for flood damages resulting from equipment malfunction and subsequent operation of the W. G. Huxtable Pumping Station in Arkansas."

Public Law 98-396, Title I, Chapter IV: "Notwithstanding any other provision of law. There is hereby appropriated the sum of $2,000,000 to remain available until expended, to pay for flood damages (not to exceed $2,000,000) resulting from equipment malfunction and subsequent operation of the W. G. Huxtable Pumping Station, St. Francis River near Marianna, Arkansas, during May and June 1983."

Current Status: A report was forwarded to the Assistant Secretary of the Army for Civil Works on 27 December 1984 which recommended a procedure and schedule for accomplishing this work. The Assistant Secretary of the Army for Civil Works approved proceeding with receiving and paying these claims on 11 January 1985. The total amount of uncontested claims paid in the fourth quarter of FY 1985 was $1,162,903.05. Three of the four remaining claims in the amount of $232,982.25 were paid in the first quarter of FY 1986. It is estimated that final settlement on the one remaining contested claim will be no more than $150,000.00.

4 FEB 1986 1080

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Mississippi River Commission
District: Memphis

Project: St. Francis Basin, Arkansas and Missouri

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	127,000 (Jul 1965)		369,000 1/		361,000 1/ 3/
Reason for Change					
a. Price Escalation		(242,000) 1/		(-8,000) 3/	
b. Design Changes		156,824		-2,565	
c. Additional Function Added Under General Authorization		4,792			
d. Authorized Modification		4,237			
e. Post-Contract Award and Other Estimating Adjustments		22,198			
f. Schedule Changes		23,800		-5,117 2/	
g. Sundry		8,607			
h. Real Estate		21,542		-318	

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes increases of $153 for Engineering and Design based on a recent reanalysis of requirements and $35 based on actual cost of completed work and decreases of $159 for Lands and Damages; $88 for Supervision and Administration based on a recent reanalysis of requirements; $23 based on actual contract amount and $5,035 based on more detailed planning of construction and relocations.
3/ Includes a decrease of $2,883 for adjustments in the estimated inflation allowance through the construction period.

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APPROPRIATION TITLE: FC, MR&T, AR, IL, KY, LA, MS, MO and TN
FLOOD CONTROL MR&T

CLASSIFICATION: CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
ST FRANCIS RIVER & TRIBS	293,768,000	181,739,000	7,811,000	8,430,000	95,788,000
LANDS AND DAMAGES	47,627,000	28,618,000	950,000	1,150,000	16,909,000
RELOCATIONS	58,958,000	23,962,000	2,717,000	3,115,000	29,164,000
FISH & WILDLIFE FAC	815,000	0	0	0	815,000
CHANNELS & CANALS	63,234,000	32,945,000	2,440,000	2,580,000	25,269,000
LEVEES & FLOODWALLS	29,129,000	20,739,000	0	0	8,390,000
PUMPING PLANT	36,210,000	35,284,000	0	0	926,000
RECREATION FACIL	150,000	120,000	0	0	30,000
FLD CONT - DIV STRUC	2,767,000	2,767,000	0	0	0
CULT RES PRESERVATION	1,242,000	1,014,000	4,000	0	224,000
ENGR AND DESIGN	32,291,000	24,182,000	1,000,000	980,000	6,129,000
SUPVR AND ADMIN	21,345,000	12,108,000	700,000	605,000	7,932,000
LITTLE RIVER	57,540,000	46,460,000	1,215,000	770,000	9,095,000
LANDS AND DAMAGES	6,604,000	5,007,000	400,000	100,000	1,097,000
RELOCATIONS	11,318,000	9,397,000	5,000	20,000	1,896,000
FISH & WILDLIFE FAC	3,206,000	3,124,000	0	0	82,000
CHANNELS & CANALS	17,239,000	15,312,000	240,000	200,000	1,487,000
LEVEES & FLOODWALLS	926,000	554,000	0	0	372,000
FLD CONT - DIV STRUC	3,934,000	3,836,000	0	0	98,000
CULT RES PRESERVATION	2,230,000	138,000	20,000	0	2,072,000
ENGR AND DESIGN	7,797,000	5,898,000	450,000	300,000	1,149,000
SUPVR AND ADMIN	4,286,000	3,194,000	100,000	150,000	842,000

EFFECTIVE DATE
01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, MEMPHIS DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, WEST MEMPHIS DIST

4 FEB 1986

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PROJECT, ST FRANCIS BASIN
AR and MO

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APPROPRIATION TITLE: FC, MR&T, AR, IL, KY, LA, MS, MO and TN
FLOOD CONTROL MR&T

CLASSIFICATION: CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL-YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
WAPPAPELLO LAKE	9,020,000	9,020,000	0	0	0
LANDS AND DAMAGES	2,248,000	2,248,000	0	0	0
RELOCATIONS	1,194,000	1,194,000	0	0	0
DAMS	3,626,000	3,626,000	0		0
RECREATION FACIL	666,000	666,000	0	0	0
BLDGS GNDS UTILITIES	302,000	302,000	0	0	0
ENGR AND DESIGN	453,000	453,000	0	0	0
SUPVR AND ADMIN	531,000	531,000	0	0	0
BIG SLOUGH & MAYO DITCH	965,000	965,000	0	0	0
LANDS & DAMAGES	175,000	175,000	0	0	0
RELOCATIONS	210,000	210,000	0	0	0
CHANNELS & CANALS	382,000	382,000	0	0	0
ENGR & DESIGN	117,000	117,000	0	0	0
SUPVR & ADMIN	81,000	81,000	0	0	0

EFFECTIVE DATE 01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, MEMPHIS DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, WEST MEMPHIS DIST

PROJECT, ST FRANCIS BASIN
AR and MO

4 FEB 1986

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APPROPRIATION TITLE: FC, MR&T, AR, IL, KY, LA, MS, MO and TN
FLOOD CONTROL MR&T

CLASSIFICATION: CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FED AND NONFED					
TOTAL COST - SCHED	361,293,000	238,184,000	9,026,000	9,200,000	104,883,000
UNDELIVERED ORDERS	0	1,812,000	-1,812,000	0	0
TOTAL OBLIGATIONS	0	239,996,000	7,214,000	9,200,000	104,883,000
FEDERAL FUNDS					
TOTAL COST - SCHED	361,000,000	237,937,000	9,026,000	9,200,000	104,837,000
UNDELIVERED ORDERS	0	1,812,000	-1,812,000	0	0
TOTAL OBLIGATIONS	0	239,749,000	7,214,000	9,200,000	104,837,000
NON-FEDERAL FUNDS					
TOTAL COST - SCHED	293,000	247,000	0	0	46,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	247,000	0	0	0

EFFECTIVE DATE
01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, MEMPHIS DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, WEST MEMPHIS DIST

PROJECT, ST FRANCIS BASIN
AR and MO

4 FEB 1085

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APPROPRIATION TITLE: FC, MR&T, AR, IL, KY, LA, MS, MO and TN
FLOOD CONTROL MR&T

CLASSIFICATION: CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FED AND NONFED					
ALLOCATIONS		240,010,000	7,200,000		
UNOB CARRYOVER PFY			14,000		
TOTAL AVAIL FOR OBL		0	7,214,000		
APPROPRIATION REQUIRED				9,200,000	104,883,000
FEDERAL FUNDS					
ALLOCATIONS		239,763,000	7,200,000		
UNOB CARRYOVER PFY			14,000		
TOTAL AVAIL FOR OBL		0	7,214,000		
APPROPRIATION REQUIRED				9,200,000	104,837,000
FUTURE FEDERAL REQUIREMENTS					
FISCAL YEAR 1988					9,500,000
FISCAL YEAR 1989					10,000,000
FISCAL YEAR 1990					10,425,000
FISCAL YEAR 1991					10,700,000
REMAINING BALANCE					64,212,000

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DIVN, MISS. RIVER COMM.
DIST, MEMPHIS DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, WEST MEMPHIS DIST

4 FEB 1986

PROJECT, ST FRANCIS BASIN
AR and MO

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APPROPRIATION TITLE: FC, M&T, AR, IL, KY, LA, MS, MO and TN
FLOOD CONTROL M&T

CLASSIFICATION: CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
NON-FEDERAL FUNDS					
CONTRIBUTIONS		247,000	0		
UNOB CARRYOVER PFY					
TOTAL AVAIL FOR OBL		0	0		
CONTRIBUTION REQUIRED				0	46,000
FUTURE NON-FED REQUIREMENTS					
FISCAL YEAR 1988					0
FISCAL YEAR 1989					0
FISCAL YEAR 1990					0
FISCAL YEAR 1991					46,000
REMAINING BALANCE					0
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS	293,000	247,000			
OTHER COSTS					46,000
LANDS AND DAMAGES	1,492,000	1,492,000			
RELOCATIONS	121,000	121,000			
TOTAL NON-FEDERAL COSTS	1,906,000	1,906,000			
TOTAL PROJECT COSTS					
FEDERAL (CORPS) COSTS AND NON-FEDERAL COSTS	362,906,000				

EFFECTIVE DATE 01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, MEMPHIS DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, WEST MEMPHIS DIST

PROJECT, ST FRANCIS BASIN
AR and MO

4 FEB 1986 1086

1086

APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO and TN - Construction

PROJECT: Eight Mile Creek, AR (Continuing)

LOCATION: The project is located in northeast Arkansas within Greene County in the vicinity of Paragould, Arkansas.

AUTHORIZATION: Supplemental Appropriations Act, 1985

BENEFIT TO COST RATIO: The remaining benefit-to-cost ratio is 1.2 to 1 at 8-1/8 percent. The benefit to cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 1.2 to 1. The benefit-to-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed Cost
Estimated Federal Cost		$ 7,570,000	
Scheduled Const.	5,868,000		
Unscheduled Const.	1,702,000		
Estimated Non-Federal Cost			
Scheduled Construction		$6,787,000	
Cash Contribution	678,000		
Other Costs	6,109,000		
Unscheduled Const.		$5,293,000	
Cash Contribution	350,000		
Other Costs	4,943,000		
Total Estimated Scheduled Const. Cost		$12,655,000	
Total Estimated Unscheduled Const. Cost		$ 6,995,000	
Total Estimated Project Cost		$19,650,000	
Allocations to 30 September 1985		$ 350,000	
Conference Allowance for FY 1986		0	
Potential Allocation for FY 1986		0	
Potential Allocations through FY 1986		350,000	5
Allocation Requested for FY 1987		350,000	9
Scheduled Balance to Complete after FY 1987 (Urban)		$ 5,168,000	
Unscheduled Balance to Complete after FY 1987 (Rural)		$ 1,702,000 1/	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	0	Sep 1994

PHYSICAL DATA	
Lands and Damages	245 acres
Relocation:	
Roads: 10 bridges	
Railroads: 2 bridges	
Channels:	
Urban Reach	3.4 miles
Rural Reach	8.0 miles
Recreation:	
Greenway	11.4 miles
Mini-parks	2
Hiking/Biking Trails	

1/ See OTHER INFORMATION

Division: Mississippi River Commission District: Memphis Region: Lower Mississippi

Eight Mile Creek, AR

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JUSTIFICATION: The Eight Mile Creek drainage basin comprises some 61 square miles including the city of Paragould, AR. Virtually all of the basin's flood problems are associated with the urban flood plain in Paragould and the large agricultural areas below Paragould. Following a severe rainfall on 19 April 1973 (6.77 inches in 16 hours), about 3,000 persons were forced from their homes and damages were estimated to be 3.6 million dollars. This storm approximated a 100-year flood. The 1980 population of Paragould and Greene County, AR was 15,248 and 30,744, respectively. Greene County does not currently qualify as a redevelopment area. Benefits for the project are 91 percent urban, 6 percent agricultural and 3 percent recreation. This project will eliminate approximately 40 percent of the agricultural and 99 percent of the urban flood losses. Total average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$1,405,000
Recreation	49,000
Advanced Replacement	27,000
Betterments	142,000
Total	$1,623,000

Redevelopment Areas (PL 89-136)

None

FISCAL YEAR 1987: The requested amount of $350,000 will be applied as follows:

Engineering and Design	$271,000
Supervision and Administration	79,000
Total	$350,000

The funds requested will be used to continue General Design Memorandum studies including soils, hydraulics, economics, cultural resources, relocations, project design and cost analysis.

Division: Mississippi River Commission District: Memphis Region: Lower Mississippi
Eight Mile Creek, AR

4 FEB 1986 1088

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NON-FEDERAL COST: Under the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, the local sponsor will be required to provide all lands, easements and rights-of-way, presently estimated at $2,072,000, provide utility and facility alterations and relocations required for construction of the project (except railroads) at a current estimated cost of $4,037,000, contribute one-half of the separable and joint costs allocated to recreation, presently estimated at $50,000, make a cash contribution of not less than 5 percent of total project costs, presently estimated at $628,000, and bear all costs of operation, maintenance, and replacements, presently estimated at $12,000 annually.

STATUS OF LOCAL COOPERATION: Assurances for the project consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership will be obtained prior to the initiation of construction. Assurance for the rural portion of the project will indefinitely be deferred.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $7,570,000 is a decrease of $6,930,000 from the latest estimate submitted to Congress ($14,500,000). This change includes increases of $5,100,000 for price level and an estimated inflation allowance from 1 October 1985 through the construction period. These increases were partially offset by a decrease of $12,030,000 based on adjustments between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH THE CLEAN WATER ACT: The feasibility studies on Eight Mile Creek were completed in FY 1977 with the report of the Mississippi River Commission submitted to the Office, Chief of Engineers on 3 June 1977 and to the Secretary of the Army on 10 August 1979. The final Environmental Impact Statement was filed with the Environmental Protection Agency on 6 March 1981. The requirements of Section 404 of the Clean Water Act will be met through State Water Quality Certification.

OTHER INFORMATION: Funds for construction were appropriated in FY 1985. Remaining work on the rural portion is indefinite pending a decision to initiate construction.

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Division: Mississippi River Commission District: Memphis Region: Lower Mississippi

1 FEB 1986 Eight Mile Creek, AR

1089

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Mississippi River Commission
District: Memphis

Project: Eight Mile Creek, AR

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	14,500 (Oct 83)		14,500 (Oct 83)		7,570 (Oct 85)
Reason for Change		0		(-6,930) 1/	
a. Price Escalation		0		3,672	
b. Design Changes		0			
c. Additional Function Added Under General Authorization		0			
d. Authorized Modification		0			
e. Post-Contract Award and Other Estimating Adjustments		0			
f. Schedule Changes		0			
g. Sundry		0		-12,030 2/	
h. Real Estate		0		1,428	

1/ Includes an allowance for estimated inflation from 1 October 1985 through the construction period.

2/ Decreased $12,030 based on adjustments between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

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4 FEB 1986

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APPROPRIATION TITLE: FC, MR&T, AR, IL, KY, LA, MS, MO and TN
FLOOD CONTROL MR&T

CLASSIFICATION: CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
URBAN					
LANDS AND DAMAGES	2,072,000	0	0	0	2,072,000
RELOCATIONS	7,195,000	0	0	0	7,195,000
CHANNELS & CANALS	561,000	0	0	0	561,000
RECREATION FACIL	84,000	0	0	0	84,000
ENGR AND DESIGN	1,802,000	0	160,000	156,000	1,486,000
SUPVR AND ADMIN	941,000	0	52,000	56,000	833,000
RURAL					
LANDS AND DAMAGES	2,598,000	0	0	0	2,598,000
RELOCATIONS	2,345,000	0	0	0	2,345,000
CHANNELS & CANALS	1,139,000	0	0	0	1,139,000
ENGR AND DESIGN	652,000	0	117,000	115,000	420,000
SUPVR AND ADMIN	261,000	0	21,000	23,000	217,000
FEDERAL AND NON-FED					
TOTAL COST - SCHED	19,650,000	0	350,000	350,000	18,950,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	350,000	350,000	18,950,000
FEDERAL FUNDS					
TOTAL COST - SCHED	7,570,000	0	350,000	350,000	6,870,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	350,000	350,000	6,870,000
NON-FEDERAL FUNDS					
TOTAL COST - SCHED	12,080,000	0	0	0	12,080,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	0	0	12,080,000

EFFECTIVE DATE 01 JAN 86 — DIVN, MISS. RIVER COMM. DIST, MEMPHIS DISTRICT — REGION, LOWER MISSISSIPPI BASIN, WEST MEMPHIS DIST — PROJECT, EIGHT MILE CREEK, AR

4 FEB 1986

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APPROPRIATION TITLE: FC, MR&T, AR, IL, KY, LA, MS, MO and TN
FLOOD CONTROL MR&T

CLASSIFICATION: CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

METHOD OF FINANCING	PROJECT COST ESTMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FED AND NONFED					
ALLOCATIONS		350,000	0		
UNOB CARRYOVER PFY		0	350,000		
TOTAL AVAIL FOR OBL		350,000	350,000		
APPROPRIATION REQUIRED				350,000	18,950,000
FEDERAL FUNDS					
ALLOCATIONS		350,000	0		
UNOB CARRYOVER PFY		0	350,000		
TOTAL AVAIL FOR OBL		350,000	350,000		
APPROPRIATION REQUIRED				350,000	6,870,000
FUTURE FEDERAL REQUIREMENTS					
FISCAL YEAR 1988					450,000
FISCAL YEAR 1989					426,000
FISCAL YEAR 1990					1,020,000
FISCAL YEAR 1991					2,675,000
REMAINING BALANCE					2,299,000
NON-FEDERAL FUNDS					
CONTRIBUTIONS		0	0		
UNOB CARRYOVER PFY		0	0		
TOTAL AVAIL FOR OBL		0	0		
CONTRIBUTION REQUIRED				0	12,080,000
FUTURE NON-FED REQUIREMENTS					
FISCAL YEAR 1988					0
FISCAL YEAR 1989					574,000
FISCAL YEAR 1990					1,480,000
FISCAL YEAR 1991					5,212,000
REMAINING BALANCE					4,814,000

EFFECTIVE DATE
01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, MEMPHIS DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, WEST MEMPHIS DIST

PROJECT, EIGHT MILE CREEK, AR

1098

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APPROPRIATION TITLE: FC, MR&T, AR, IL, KY, LA, MS, MO and TN
FLOOD CONTROL MR&T

CLASSIFICATION: CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
NON-FEDERAL FUNDS					
CASH CONTRIBUTIONS	1,028,000	0	0	0	1,028,000
OTHER COSTS		0	0	0	
LANDS AND DAMAGES	4,670,000	0	0	0	4,670,000
RELOCATIONS	6,382,000	0	0	0	6,382,000

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EFFECTIVE DATE 01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, MEMPHIS DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, WEST MEMPHIS DIST

PROJECT, EIGHT MILE CREEK, AR

1093

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APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO, and TN - Construction

PROJECT: Tensas Basin, Arkansas and Louisiana (Continuing)

LOCATION: The Tensas Basin is located in the alluvial valley of Arkansas and Louisiana between the Mississippi River on the east and an escarpment on the west and extends southward from the Arkansas River to the Red River in the vicinity of Marksville, LA.

AUTHORIZATION: Flood Control Acts of 1941, 1944, 1946, 1950, 1958, 1962, 1965, and 1968.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 3.6 to 1 at 2-1/2 percent. The benefit-cost ratio is based on the Tensas Basin feature included in the Mississippi River and Tributaries project. This project feature was authorized in Fiscal Year 1941 and initial construction funds were provided in Fiscal Year 1947. The authorized comprehensive review of the Mississippi River and Tributaries project, contained in House Document 308/88/2, as updated to reflect 1965 conditions and price levels, is considered to be the base estimate for the project. The benefit-cost ratio for the Tensas Basin component computed for the base estimate was 3.0 to 1.

SUMMARIZED FINANCIAL DATA

					Accum. % of Est. Fed.Cost
Estimated Total Apprn. Requirements		$443,707,000	Allocations to 30 September 1985	$223,019,000	
Future Non-Federal Reimb.	2,004,000		Conference Allowance for FY 1986	7,810,000	
Estimated Federal Cost (Ultimate)		$441,703,000	Allocation for FY 1986	7,810,000	
Estimated Non-Federal Cost		29,764,000	Allocations to Date	230,829,000	49
Reimbursement					
Recreation Facilities	2,004,000		Allocation Requested for FY 1987	5,600,000	50
Cash Contribution	7,775,000		Scheduled Balance to Complete after FY 1987	147,108,000	
Other	19,985,000		Unscheduled Balance to Complete after FY 1987	60,170,000 1/	
Total Estimated Project Cost		$471,467,000			

1/ See OTHER INFORMATION.

Division: Mississippi River Commission District: Vicksburg and New Orleans Region: Lower Mississippi
Tensas Basin, Arkansas and Louisiana

4 FEB 1986 1091

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	77	Apr 2013
Boeuf and Tensas Rivers, Etc.	87	Apr 2013
All Work Except Lake Chicot Pumping Plant	80	Apr 2013 1/
Lake Chicot Pumping Plant	97	Sep 1987 1/
Red River Backwater Area	65	Sep 2010
All Work Except Tensas-Cocodrie Pumping Plant	61	Sep 2010 1/
Tensas-Cocodrie Pumping Plant	82	Sep 1987

1/ See OTHER INFORMATION.

PHYSICAL DATA
Boeuf and Tensas Rivers, Etc.
All Work Except Lake Chicot Pumping Plant

Lands and Damages:	Relocations:	Channels and Canals:
74,279 acres	Roads: 26.6 miles and 88 bridges Railroads: 9 bridges	1,002.2 Miles

Lake Chicot Pumping Plant

Lands and Damages:	Relocations:	Channels and Canals:	Dams:
1,201 acres	Roads: 1 Mile	2 Weirs	1 - 200 feet length 1 - 300 feet length

Recreation Facilities:	Pumping Plants:	Roads:
6 sites	1 - 6,500 cubic feet per second	1 - Access Road for Pumping Plant 1 - Access Road for Ditch Bayou Dam 1 - Access Road for Connerly Bayou Dam

Tensas Basin, Arkansas and Louisiana

4 FEB 1986

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Red River Backwater Area
All Work Except Tensas-Cocodrie Pumping Plant

Lands and Damages:

29,146 acres (Includes 12,800 acres for Mitigation)

Channels and Canals: 46.0 miles

All Interior Drainage except 1-1/2 miles Smithland Cutoff

Pumping Plants:

1-300 cubic feet per second
1-750 cubic feet per second
1-500 cubic feet per second

Relocations:

Roads: 28.4 miles and 5 bridges

Recreation Facilities:

9 miles Access Road

Fish and Wildlife:

1.1 miles diversion channel, 2-60 inch pipe gravity structures, 1 weir

Levees and Floodwalls:

Levees:
Average Height: 10-25 feet
Length: 263.6 miles
Drainage Structures: 27 (24" pipes to 10' x 15' box culverts)

Tensas-Cocodrie Pumping Plant

Lands and Damages:

790 acres

Pumping Plant:

1-4,000 cubic feet per second

Relocations:

Roads: 1.4 miles and 3 bridges

Fish and Wildlife Facilities:

Diversion Channel
2 Water Control Structures
4 Boat Launching Ramps

Channels and Canals:

6.8 miles, 1 concrete weir, 1 earth weir, and 1 Gravity Structure

Tensas Basin, Arkansas and Louisiana

4 FEB 1986 1096

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JUSTIFICATION: The Tensas Basin project is comprised of two separable units: the Boeuf and Tensas Rivers, which includes the Lake Chicot Pumping Plant, and the Red River Backwater Area, which includes the Tensas-Cocodrie Pumping Plant.

The land in the Boeuf and Tensas River Basin possesses a high potential for agricultural production but this potential is restricted by the frequency and duration of overflow and by poor drainage which, for long periods, causes the ground to remain in a condition unsuitable for cultivation. The project will eliminate most of these hindrances and allow full economic development by providing adequate channels for the streams and major outlets for an effective local drainage system. A total of 922,000 acres (including Lake Chicot) will be substantially benefited by the project. Lands in the Red River Backwater Area are extremely fertile but their development to full potential is adversely affected by backwaters of the Mississippi River. These lands must remain subject to use for storage of floodwaters during a Mississippi River project flood. However, protection of the area against lesser floods, particularly headwater floods of the Ouachita, Black, and Red Rivers, will permit a high degree of economic development. A total of 575,700 acres will be substantially benefited by the project.

The total average annual benefits and designated redevelopment areas for the Tensas Basin are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$69,111,000
Recreation	861,000
Fish and Wildlife	99,000
Area Redevelopment	2,615,000
Total	$72,686,000

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Redevelopment Areas (PL 89-136)

State and County or Parish	Title	Subsection
Arkansas		
Chicot	IV	(2,8)
Desha	IV	(8)
Drew	IV	(8)
Jefferson	IV	(6)
Lincoln	IV	(2,8)

State and County or Parish	Title	Subsection
Louisiana		
Avoyelles	IV	(2,8)
Caldwell	IV	(8)
Catahoula	IV	(8)
Concordia	IV	(8)
East Carroll	IV	(2,7,8)
Franklin	IV	(2,8)
Grant	IV	(8)
Jackson	IV	(6,8)
La Salle	IV	(8)
Madison	IV	(2,8)

State and County or Parish	Title	Subsection
Louisiana (Cont)		
Morehouse	IV	(8)
Ouachita	IV	(8)
Pointe Coupee	IV	(1)
Rapides	IV	(8)
Richland	IV	(8)
St. Landry	IV	(8)
Tensas	IV	(2,8)
Union	IV	(8)
West Carroll	IV	(1)
West Feliciana	IV	(1,7)
Winn	IV	(8)

State and County or Parish	Title	Subsection
Mississippi		
Adams	IV	(8)
Bolivar	IV	(2)
Claiborne	IV	(2,8)
Jefferson	IV	(2,7,8)
Warren	IV	(8)
Washington	IV	(8)
Wilkinson	IV	(2,8)

4 FEB 1986 1098

FISCAL YEAR 1987: The requested amount of $5,600,000 will be applied as follows:

Boeuf and Tensas Rivers, Etc., All Work Except Lake Chicot Pumping Plant

Engineering and Design	$515,000
Supervision and Administration	45,000
Subtotal	$560,000

The funds will be used tc continue detailed engineering studies for Tensas River. The funds requested are the minimum necessary to meet presently estimated completion date. When complete, this work will provide flood control and drainage benefits to an extensive area of productive farmland in Louisiana.

Lake Chicot Pumping Plant

Initiate and Complete:	Rowdy Bend Rec Site	$273,000
	Restroom Rehab	99,000
Engineering and Design		238,000
Supervision and Administration		205,000
	Subtotal	$815,000

Funds will be used to initiate and complete the Rowdy Bend recreation facilities. Engineering and Design and Supervision and Administration funds will be used to conclude activities at Lake Chicot. The funds are the minimum necessary to meet presently estimated completion dates.

Total - Boeuf and Tensas Rivers Including Lake Chicot	$1,375,000

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Red River Backwater Area
All Work Except Tensas-Cocodrie Pumping Plant

Initiate:	Tensas-Cocodrie Levee Enlargement, Item 4	$1,539,000
Continue:	Lands and Damages	200,000
Engineering and Design		790,000
Supervision and Administration		196,000
	Subtotal	$2,725,000

Funds will be used to complete land purchase and initiate construction of Tensas-Cocodrie levee enlargement Item 4, and continue planning of levee work in the Tensas-Cocodrie and Below Red River Areas. The funds requested are the minimum necessary to meet presently estimated completion dates. Enlargement of the Tensas-Cocodrie Levee system will provide the intended degree of flood protection to some 373,000 acres of land in the Red River Backwater area.

Tensas-Cocodrie Pumping Plant

Initiate and Complete:	Four Boat Launching Ramps	$ 487,000
	Two Water Control Structures	197,000
	3 Powerline Relocations	26,000
Complete:	Diversion Channel	289,000
	Tensas-Cocodrie Pumping Plant (Turfing)	50,000
Engineering and Design		250,000
Supervision and Administration		201,000
	Subtotal	$1,500,000

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4 FEB 1986 1100

Funds will be used to initiate and complete construction of two water control structures, 4 boat-launching ramps, and 3 powerline relocations; and complete construction of the diversion channel and the pumping plant. The funds requested are the minimum necessary to meet presently estimated completion dates. The pumping plant will reduce the level of interior ponding that will occur within the Tensas-Cocodrie area during high river stages when operation of the gravity drainage structure is not possible.

Total - Red River Backwater Area	$4,225,000
Total - Tensas Basin	$5,600,000

NON-FEDERAL COST:

All Work Except Boeuf and Tensas-Tensas River, and Red River Backwater-Below Red River:

Local interests are required to furnish lands for the Tensas-Cocodrie, Sicily Island, and Below Red River Pumping Plants (Red River Backwater Area) and to provide 50 percent of the total first cost of recreation facilities at Lake Chicot, AR (Boeuf and Tensas Rivers, Etc.). The required non-Federal costs for the Tensas Basin are broken down as follows:

Lands and Damages (Flood Control)	$ 14,000
Lands and Damages (Recreation) (Completed)	323,000
Lands and Damages (Flood Control) (Completed)	100,000
Lands and Damages (R/W for Tensas-Cocodrie Pumping Plant) (Completed)	30,000
Reimbursement (Recreation Facilities)	2,004,000
Total	$2,471,000

Local interests perform minor maintenance of channels and levees and operate and maintain structures except the Bayou Cocodrie Drainage Structure and the Tensas-Cocodrie and Lake Chicot Pumping Plants. Local interests will also operate and maintain recreation facilities at Lake Chicot, AR. The estimated annual maintenance cost to local interests for the Tensas Basin is $1,367,000.

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Local interests estimate that they have expended at least $5,900,000 in the Tensas Basin (excluding Tensas River and Below Red River) on the construction of drainage improvements prior to initiation of the Federal project. They estimate they will spend an additional $46,000,000 in construction on connecting ditches, main laterals, and on-farm drainage improvements. This work is being accomplished as the major outlets are opened. Local drainage and levee districts have reported that they expended approximately $4,760,686 on construction and maintenance of drainage improvements between 1950 and 1984.

Tensas River and Below Red River:

Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, and rights-of-way presently estimated at $10,039,000; modify or relocate buildings, utilities, roads and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $9,479,000, and pay 5 percent of the costs allocated to flood control presently estimated at $7,775,000.

Boeuf and Tensas-Tensas Rivers	
Cash Contributions	$3,320,000
Other Costs	
Lands and Damages	8,369,000
Relocations	9,479,000
Other	0

Local interests are required to bear the cost of all operation and maintenance currently estimated at $400,000.

Red River Backwater Area-Below Red River Area	
Cash Contributions	$4,455,000
Other Costs	
Lands and Damages	1,670,000
Relocations	0
Other	0

Local interests are required to bear the cost of all operation and maintenance currently estimated at $100,000.

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STATUS OF LOCAL COOPERATION:

Boeuf and Tensas Rivers, Etc.

Formal assurances have been furnished by eight levee and drainage districts to operate and maintain all units of the project except the Kirsch Lake Canal. Assurances for Kirsch Lake Canal will be requested during the detail stage of planning. Assurances for Lake Chicot Pumping Plant required by PL 9-611 and PL 91-646 were accepted 16 April 1976 and a cost-sharing agreement was executed 28 May 1976. All lands for Lake Chicot recreation development were furnished by 30 March 1976.

The local development authority which provided assurances that it would operate and maintain Corps constructed recreation facilities in the Tensas Basin at Lake Chicot, AR, has notified the Vicksburg District that it is unable to comply with the assurances previously furnished. Because of the inability of the local development authority to execute its assurances, construction of two additional recreation facilities at Lake Chicot has been delayed indefinitely.

Red River Backwater Area

Formal assurances were received 12 February 1947 and accepted 24 April 1947 for all project features except the Sicily Island Area. Assurances of local cooperation were received on 10 February 1981 and accepted 1 April 1981 for the Sicily Island Area project. The adoption of a constitutional amendment in the general election of 1 February 1972 gave the State of Louisiana and its agencies authority to comply with the Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970 (PL 91-646). Supplemental assurances covering the requirements of PL 91-646 for the Larto Lake to Jonesville Area were received 9 May 1972 and accepted 25 May 1972. Supplemental assurances covering the requirements of PL 91-646 for the Tensas-Cocodrie Levee Enlargement were received 1 February 1974 and accepted 7 February 1974. Supplemental assurances covering the requirements of PL 91-646 for the Tensas-Cocodrie Pumping Plant were received 18 August 1975 and accepted 27 August 1975.

Assurances for the Tensas River and Below Red River elements, consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership will be obtained prior to the initiation of construction.

4 FEB 1986

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COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $443,707,000 is a decrease of $10,293,000 from the latest estimate ($454,000,000) submitted to Congress. This change includes increases of $6,460,000 for adjustments in the estimated inflation allowance through the construction period, $4,435,000 based on more detailed planning of construction and relocations, $4,174,000 in Engineering and Design and $2,263,000 in Supervision and Administration based on a recent reanalysis of requirements. These increases were more than offset by decreases of $167,000 based on actual cost of completed work, $165,000 based on contract award, and $27,293,000 based on adjustments between Federal and non-Federal cost estimates consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

Environmental Impact Statements have been submitted to the Environmental Protection Agency as follows:

Project Unit	Draft	Final
Boeuf and Tensas Rivers, Etc:		
Tensas River Project, LA	13 October 1981	8 May 1984
Lake Chicot Pumping Plant	24 September 1973	29 August 1975
Red River Backwater Area:		
Sicily Island	29 June 1978	14 May 1982
Below Red River	11 March 1980	30 October 1981
Tensas-Cocodrie Pumping Plant	28 May 1976 (Revised)	24 September 1976

The provisions of Section 404 of the Clean Water Act will be followed as detailed plans for individual work items are developed. The schedule for compliance with Section 404 requirements for items to be initiated in FY 1987 is as follows:

Item	Issuance of Public Notice	State Certification	Date of Signature by District Engineer on Report
Boeuf and Tensas Rivers, Lake Chicot Pumping Plant			
Rowdy Bend	22 Feb 85	11 Mar 85	15 Mar 85

4 FEB 1986 1104

Item	Issuance of Public Notice	State Certification	Date of Signature by District Engineer on Report
Red River Backwater Area (Including Tensas-Cocodrie Pumping Plant			
Tensas-Cocodrie Levee Enlargement			
Levee Item 4	N/A	N/A	N/A
2 Water Control Structures	22 Sep 81	30 Dec 81	26 Jan 82
Boat-Launching Ramps 1 and 2	—	—	18 Jul 80
Boat-Launching Ramp 3	4 Sep 81	15 Jan 82	9 Mar 82
Boat-Launching Ramp 4	Dec 86	Jan 87	Feb 87

Boeuf-Tensas Rivers, Etc., Including Lake Chicot Pumping Plant and Red River Backwater Area, Including Tensas-Cocodrie Pumping Plant

The project will provide headwater and backwater flood control and the reduced duration and extent of flooding of agricultural lands and residential areas will increase economic returns and improve social and physical living conditions of area residents. Flood protection will induce the clearing of hardwood forests for agricultural production with attendant forest wildlife losses. Physical alteration of the Upper Tensas River and more intensive agricultural practices will result in fishery losses from channel alteration and increased pesticide and sediment concentrations; however, the adverse impacts on wildlife and fisheries resources have been mitigated through purchase of the 52,000-acre Tensas National Wildlife Refuge which was finalized in FY 1985.

OTHER INFORMATION: Funds to initiate construction were appropriated and allotted in FY 1947 on Red River Backwater Area and in FY 1948 on Boeuf and Tensas River, etc.

Former President Carter recommended that this project be modified to eliminate channelization of the Tensas River to the extent possible. The House Report No. 95-379 dated 2 June 1977 stated, "The Corps of Engineers is directed to proceed with the entire project as authorized." The Senate Report No. 95-301 dated 25 June 1977 generally concurred with the proposed modification. The Corps of Engineers has developed a plan of channel enlargement and clearing for the Tensas River; however, no channelization work is scheduled pending a decision to initiate construction.

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Red River Backwater Below Red River Area and Sicily Island Area.

Energy and Water Development Appropriation Act, 1981, PL 96-367, 1 October 1980: "Provided further, that funds in Act for the Tensas Basin Red River Backwater Area, Louisiana project are to be used to construct features for flood control and allied purposes for Sicily Island and Below Red River including pumping stations and such other modifications of these or existing features in this area as the Chief of Engineers determines advisable, subject to non-Federal cooperation for each separable feature of such work at the time of construction as is required for work pursuant to the August 18, 1941, authorization."

Senate Report No. 96-927, page 123: "The 1941 Flood Control Act authorized construction of a levee and improvements to protect the Tensas-Cocodrie subarea of the large Red River Backwater Area, with the provision that the Chief of Engineers, after further investigation, could, in his discretion, substitute other levees for, or make modifications of, the levees and improvements authorized for the Tensas-Cocodrie to afford protection to a larger area of the Red River Backwater Area. The 1941 Act also indicates the intent of Congress to protect a substantially larger area of the Red River Backwater Area.

"Consistent with the intent of Congress, improvements to protect the Below Red River and Sicily Island Area are to be constructed generally in accordance with the plans contained in House Document No. 308, 88th Congress, and with such modifications of these projects and the existing projects in the Red River Backwater Area, including pump stations, as in the discretion of the Chief of Engineers may be advisable."

The planning report for the Sicily Island Area project has been reviewed and approved by the Chief of Engineers. Construction of the first item of work has been completed and the second item of construction was initiated in August 1985. The Phase I General Design Memorandum for Below Red River Area was approved 23 March 1981, and a detailed planning report was initiated in Fiscal Year 1982; however, due to a reevaluation of the area flow lines and effort required to determine the most economical pumping station configuration and operation, completion of the report has been rescheduled for September 1988.

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1/ The unscheduled balance to complete after FY 1987 is for the following:

Two recreation sites at the Lake Chicot project have been deferred indefinitely based on current Administration policy and our understanding of the local sponsor's limited resources to operate and maintain additional sites.

The Phase II Engineering and Design for the Tensas River element (Boeuf-Tensas Rivers, Etc.) is scheduled for completion in September 1987 and for the Below Red River area element (Red River Backwater Area) in September 1988; however, construction is indefinite pending a decision to initiate construction consistent with the cost-sharing and financing concept agreed to by the Administration and the Senate Majority Leadership.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Mississippi River Commission
District: Vicksburg

Project: Tensas Basin, Arkansas and Louisiana

	Original Baseline (1)	Cumulative Changes (2)	Estimates Presented to Congress ($1,000) Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	86,400 (Jul 1965)		454,000 1/		443,707 1/ 2/
Reason for Change		(367,600) 1/		(-10,293) 2/	
a. Price Escalation		240,741		6,460	
b. Design Changes		51,817			
c. Additional Function Added Under General Authorization					
d. Authorized Modification		25,679			
e. Post-Contract Award and Other Estimating Adjustments		22,225		10,540 3/	
f. Schedule Changes					
g. Sundry		1,070		-27,293 4/	
h. Real Estate		26,068			

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes an increase of $6,460 for adjustments in the estimated inflation allowance through the construction period.
3/ Includes increases of $4,435 based on more detailed planning of construction and relocations, and $4,174 in Engineering and Design and $2,263 in Supervision and Administration based on a recent reanalysis of requirements. These increases were partially offset by decreases of $167 based on actual cost of completed work and $165 based on contract award.
4/ Decrease of $27,293 based on adjustments between Federal and non-Federal cost estimates consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

4 FEB 1966 1108

APPROPRIATION TITLE
FC, MR&T, AR, IL, KY, LA, MS, MO, TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
BOEUF TENSAS	88,000,000	37,295,000	0	0	50,705,000
TENSAS RIVER	66,400,000	2,123,000	303,000	560,000	63,414,000
LANDS & DAMAGES	8,369,000	22,000	0	0	8,347,000
RELOCATIONS	11,249,000	0	0	0	11,249,000
CHANNELS & CANALS	34,696,000	871,000	0	0	33,825,000
ENGR & DESIGN	6,794,000	1,106,000	273,000	515,000	4,900,000
SUPV & ADMIN	5,292,000	124,000	30,000	45,000	5,093,000
LAKE CHICOT PPLT	92,300,000	86,643,000	2,157,000	815,000	2,685,000
LANDS & DAMAGES	932,000	932,000	0	0	0
RELOCATIONS	73,000	73,000	0	0	0
DAMS	7,403,000	7,348,000	55,000	0	0
ROADS,RR,BRIDGES	805,000	558,000	231,000	0	16,000
CHANNELS & CANALS	7,079,000	6,181,000	858,000	0	40,000
PUMPING PLANT	54,540,000	52,984,000	432,000	0	1,124,000
RECREATION FACIL	3,808,000	2,640,000	0	372,000	796,000
BLDGS GNDS UTILITIES	2,508,000	2,313,000	110,000	0	85,000
PERM OPER EQUIPMENT	53,000	0	53,000	0	0
ENGR & DESIGN	9,276,000	8,780,000	258,000	238,000	0
SUPV & ADMIN	5,823,000	4,834,000	160,000	205,000	624,000
RED RIVER BACKWATER	145,400,000	48,756,000	2,450,000	2,525,000	91,669,000
LANDS & DAMAGES	18,420,000	8,872,000	160,000	200,000	9,188,000
RELOCATIONS	5,506,000	1,648,000	94,000	289,000	3,475,000
FISH & WILDLIFE	1,939,000	1,033,000	78,000	0	828,000
CHANNELS & CANALS	2,684,000	1,081,000	4,000	0	1,599,000
LEVEES&FLOODWALLS	72,160,000	22,129,000	1,613,000	1,250,000	47,168,000
PUMPING PLANT	11,281,000	0	0	0	11,281,000
RECREATION FACIL	1,361,000	1,361,000	0	0	0
ENGR & DESIGN	20,372,000	9,701,000	333,000	600,000	9,738,000
SUPV & ADMIN	11,677,000	2,931,000	168,000	186,000	8,392,000

EFFECTIVE DATE
01 JAN 86

DIVN,MISS. RIVER COMM.
DIST,VICKSBURG DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, TENSAS

PROJECT,TENSAS BASIN-RECAP

4 FEB 1986

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APPROPRIATION TITLE
FC, MR&T, AR, IL, KY, LA, MS, MO, TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
BELOW RED RIVER	24,500,000	714,000	200,000	200,000	23,386,000
LANDS & DAMAGES	1,670,000	0	0	0	1,670,000
CHANNELS & CANALS	281,000	0	0	0	281,000
LEVEES&FLOODWALLS	10,862,000	0	0	0	10,862,000
PUMPING PLANT	7,166,000	0	0	0	7,166,000
ENGR & DESIGN	2,530,000	656,000	178,000	190,000	1,506,000
SUPV & ADMIN	1,991,000	58,000	22,000	10,000	1,901,000
TENSAS COCODRIE	54,400,000	44,204,000	5,984,000	1,500,000	2,712,000
LANDS & DAMAGES	514,000	514,000	0	0	0
RELOCATIONS	1,811,000	1,594,000	153,000	26,000	38,000
FISH & WILDLIFE	1,414,000	0	140,000	973,000	301,000
CHANNELS & CANALS	13,903,000	13,903,000	0	0	0
PUMPING PLANT	22,749,000	18,341,000	3,432,000	50,000	926,000
BLDGS GNDS UTILITIES	1,905,000	601,000	1,238,000	0	66,000
ENGR & DESIGN	8,313,000	6,729,000	465,000	250,000	869,000
SUPV & ADMIN	3,791,000	2,522,000	556,000	201,000	512,000
FED AND NON-FED					
TOTAL COST - SCHED	471,000,000	219,735,000	11,094,000	5,600,000	234,571,000
UNDELIVERED ORDERS	0	2,129,000	-2,129,000	0	0
TOTAL OBLIGATIONS	0	221,864,000	8,965,000	5,600,000	234,571,000
FEDERAL FUNDS					
TOTAL COST - SCHED	443,707,000	219,735,000	11,094,000	5,600,000	207,278,000
UNDELIVERED ORDERS	0	2,129,000	-2,129,000	0	0
TOTAL OBLIGATIONS	0	221,864,000	8,965,000	5,600,000	207,278,000

EFFECTIVE DATE
01 JAN 86

DIVN,MISS. RIVER COMM.
DIST,VICKSBURG DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, TENSAS

PROJECT,TENSAS BASIN-RECAP

4 FEB 1986 1110

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APPROPRIATION TITLE
FC, MR&T, AR, IL, KY, LA, MS, MO, TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
NON-FEDERAL FUNDS					
TOTAL COST - SCHED	27,293,000	0	0	0	27,293,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	0	0	27,293,000
METHOD OF FINANCING					
FED AND NON-FED					
ALLOCATIONS		223,019,000	7,810,000		
UNOB CARRYOVER PFY			1,155,000		
TOTAL AVAIL FOR OBL		0	8,965,000		
APPROPRIATION REQUIRED				5,600,000	234,571,000
FEDERAL FUNDS					
ALLOCATIONS		223,019,000	7,810,000		
UNOB CARRYOVER PFY			1,155,000		
TOTAL AVAIL FOR OBL		0	8,965,000		
APPROPRIATION REQUIRED				5,600,000	207,278,000
				FUTURE FEDERAL REQUIREMENTS	
				FISCAL YEAR 1988	4,800,000
				FISCAL YEAR 1989	7,100,000
				FISCAL YEAR 1990	5,000,000
				FISCAL YEAR 1991	1,500,000
				REMAINING BALANCE	188,878,000

EFFECTIVE DATE
01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, VICKSBURG DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, TENSAS

PROJECT, TENSAS BASIN

4 FEB 1986

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APPROPRIATION TITLE
FC, MR&T, AR, IL, KY, LA, MS, MO, TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
NON-FEDERAL FUNDS					
CONTRIBUTIONS		0	0		
UNOB CARRYOVER PFY					
TOTAL AVAIL FOR OBL		0	0		
CONTRIBUTION REQUIRED				0	27,293,000
				FUTURE NON-FED REQUIREMENTS	
				FISCAL YEAR 1988	0
				FISCAL YEAR 1989	0
				FISCAL YEAR 1990	0
				FISCAL YEAR 1991	0
				REMAINING BALANCE	27,293,000
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS		7,775,000			
OTHER COSTS		19,985,000			
LANDS AND DAMAGES		10,506,000			
RELOCATIONS		9,479,000			
OTHER		0			

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EFFECTIVE DATE 01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, VICKSBURG DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, TENSAS

PROJECT, TENSAS BASIN-RECAP

4 FEB 1986 1112

APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO and TN - Construction

PROJECT: West Kentucky Tributaries, Kentucky (Continuing)

LOCATION: Obion Creek, which is about 59 miles long, rises in the south central part of Graves County, Kentucky, flows generally northwestward across the northeast corner of Hickman County into Southern Carlisle County; thence, southwestward through Hickman County and enters the Mississippi River about 922 miles above the Head of Passes, immediately upstream from the town of Hickman in Fulton County, Kentucky.

AUTHORIZATION: Flood Control Acts of 1965 and 1970

BENEFIT TO COST RATIO: The remaining benefit - remaining cost ratio is 2.3 to 1 at 3-1/4 percent. The benefit to cost ratio for the fiscal year for which Congress appropriated initital construction funds (FY 1971) was 1.8 to 1. The benefit to cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Federal Cost		$ 20,955,000	
Estimated Non-Federal Cost		6,985,000	
Cash Contribution	1,838,000		
Other Costs	5,147,000		
Total Estimated Project Cost		$ 27,940,000	
Allocations to 30 September 1985		$ 1,169,000	
Conference Allowance for FY 1986		0	
Allocation for FY 1986		350,000 1/	
Allocations to Date		1,519,000	7
Allocation Requested for FY 1987		100,000	8
Scheduled Balance to Complete After FY 1987		0	
Unscheduled Balance to Complete After FY 1987		19,336,000	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	6	Indefinite 2/

PHYSICAL DATA

Relocations:

Railroads	2 bridges
Utilities	3 gas pipelines
	8 electric lines

Channels and Canals: 41.7 miles

1/ Reflects $350,000 proposed transfer to the project.

2/ Engineering and Design for the project is scheduled to be completed in FY 1987 after which it will be considered for construction consistent with the cost-sharing and financing concept agreed to by the Administration and the Senate Majority Leadership.

Division: Mississippi River Commission District: Memphis Region: Lower Mississippi
West Kentucky Tributaries, Kentucky

4 FEB 1986

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JUSTIFICATION: The improvement of Obion Creek will alleviate flooding on approximately 30,000 acres of flood plain lands along the main watercourse of Obion Creek. About 50 percent of these lands are cleared. The improved channel will provide complete protection from floods with a recurrence interval of approximately one in 1.5 years and will reduce the height and duration of larger floods. Under existing conditions, damaging floods occur almost annually. Total average annual benefits and designated redevelopment areas are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$1,992,000
Area Redevelopment	151,000
Advance Replacement	36,000
Total	$2,179,000

Redevelopment Areas (PL 89-136)

State and County	Title	Subsection
Kentucky		
Carlisle	IV	8
Fulton	IV	8
Graves	IV	8
Hickman	IV	8

FISCAL YEAR 1987: The requested amount of $100,000 will be applied as follows:

Engineering and Design	$ 85,000
Supervision and Administration	15,000
Total	$100,000

Funds requested will be used to complete the necessary engineering, economic, and environmental studies for evaluation of the clearing and snagging alternative as requested by the local sponsor.

NON-FEDERAL COST: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $2,405,000; modify or relocate building, utilities, roads and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $2,742,000 for construction; pay 5 percent of the costs allocated to flood control, presently estimated at $1,838,000, and bear all costs of operation, maintenance and replacement of flood control facilities presently estimated at $27,000 annually.

STATUS OF LOCAL COOPERATION: The Obion Creek Watershed Conservancy District, the sponsoring agency for the improvements, furnished all required assurances of local cooperation on 3 March 1969. The assurances were accepted on 21 March 1969. Additional assurances required by PL 91-646 and Section 221, Public Law 91-611 have been furnished and were accepted on 25 October 1972. A contract for relocation of a railroad bridge was awarded and $7,000 was expended. However, due to environmental problems, the contract was terminated. Assurances for the project consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership will be obtained prior to the initiation of construction.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $20,955,000 is an increase of $555,000 over the latest estimate ($20,400,000) submitted to Congress. This increase includes $3,400,000 for higher price level and was partially offset by a decrease of $2,845,000 based on adjustments between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: An Environmental Impact Statement was filed with the Council on Environmental Quality on 10 June 1971. An updated draft Environmental Impact Statement was filed on 17 March 1975. The final Environmental Impact Statement was filed with the Environmental Protection Agency on 27 January 1978. Draft Supplement No. 1 to the final Environmental Impact Statement was filed with the Environmental Protection Agency on 10 April 1978 and the final Supplement No. 1 was filed with the Environmental Protection Agency on 1 November 1978. The purpose of Supplement No. 1 was to present the results of considerations given to the deposition of material into wetlands in the entire project as required by Section 404 of Public Law 92-500.

Supplement No. 1 to the final Environmental Impact Statement and accompanying documents were provided to the Congress on 24 July 1979 in accordance with Section 404(r) of the Clean Water Act. The purpose of providing the Supplement to the Congress was to provide them the opportunity to consider the effects of the discharge of dredged or fill material into waters of the United States including consideration of the Section 404(b)(1) Guidelines. Appropriation of construction funds by the Congress, after having this information, will complete the Section 404 consideration process since the discharge will no longer be subject to regulation under Section 404 of the Clean Water Act unless the location or method of discharge changes.

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OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1968 and for construction in FY 1971. Initiation of construction was delayed due to delay in planning and filing of the final Environmental Impact Statement. Section 404 matters concerning wetlands in the project area were resolved in 1979 through the Section 404(r) process of the Clean Water Act. Since resolution of the Section 404 matters, other problems such as awaiting authorization for acquisition of mitigation lands and the financial inability of the project sponsor to acquire construction rights-of-way further delayed initiation of construction. By letter of 6 April 1984, the local sponsor notified Memphis District that they no longer supported the project as currently formulated. They have requested that the Corps consider clearing and snagging of the channel in lieu of the planned enlargements and diversions. They have further requested that no fish and wildlife mitigation lands be acquired. Memphis District is continuing to work with the local sponsor and the U.S. Fish and Wildlife Service in developing an implementable flood control plan of improvement.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

DIVISION: Mississippi River Commission
District: Memphis

Project: West Kentucky Tributaries, Kentucky

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline	Cumulative Changes	Last	Incremental Change	Current
Federal Cost (Price Level)	2,000 (Jul 1965)		20,400		20,955 (Oct 1985)
Reason for Change		(18,400)		(555)	
a. Price Escalation		12,655		3,400	
b. Design Changes		1,761			
c. Additional Function Added Under General Authorization					
d. Authorized Modification		499			
e. Post-Contract Award and Other Estimating Adjustments		3,353			
f. Schedule Changes					
g. Sundry		132		-2,845 1/	
h. Real Estate					

1/ Decreased $2,845 based on adjustments between Federal and non-Federal cost estimates consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

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APPROPRIATION TITLE: FC, MR&T, AR, IL, KY, LA, MS, MO and TN
FLOOD CONTROL MR&T

CLASSIFICATION: CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
LANDS & DAMAGES	2,405,000	0	0	0	2,405,000
RELOCATIONS	3,970,000	7,000	0	0	3,963,000
CHANNELS & CANALS	17,139,000	0	0	0	17,139,000
ENGR AND DESIGN	2,517,000	1,031,000	313,000	85,000	1,088,000
SUPVR AND ADMIN	1,909,000	131,000	37,000	15,000	1,726,000
FEDERAL AND NON-FEDERAL FUNDS					
TOTAL COST - SCHED	27,940,000	1,169,000	350,000	100,000	26,321,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	1,169,000	350,000	100,000	26,321,000
FEDERAL FUNDS					
TOTAL COST - SCHED	20,955,000	1,169,000	350,000	100,000	19,336,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	1,169,000	350,000	100,000	19,336,000
NON-FEDERAL FUNDS					
TOTAL COST - SCHED	6,985,000	0	0	0	6,985,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	0	0	0

EFFECTIVE DATE
01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, MEMPHIS DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, EAST MEMPHIS DIST

PROJECT, WEST KENTUCKY TRIBS

4 FEB 1986

1118

APPROPRIATION TITLE: FC, MR&T, AR, IL, KY, LA, MS, MO and TN
FLOOD CONTROL MR&T

CLASSIFICATION: Construction
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
METHOD OF FINANCING					
FEDERAL FUNDS					
ALLOCATIONS		1,169,000	350,000 1/		
UNOB CARRYOVER PFY		0			
TOTAL AVAIL FOR O&L			350,000		
APPROPRIATION REQUIRED				100,000	19,336,000
				FUTURE FEDERAL REQUIREMENTS	
				FISCAL YEAR 1988	0
				FISCAL YEAR 1989	0
				FISCAL YEAR 1990	0
				FISCAL YEAR 1991	0
				REMAINING BALANCE	19,336,000
NON-FEDERAL					
ALLOCATIONS		0	0	0	0
UNOB CARRYOVER PFY		0			
TOTAL AVAIL FOR OBL			0	0	0
CONTRIBUTION REQUIRED					6,985,000
				FUTURE NON-FEDERAL REQUIREMENTS	
				FISCAL YEAR 1988	0
				FISCAL YEAR 1989	0
				FISCAL YEAR 1990	0
				FISCAL YEAR 1991	0
				REMAINING BALANCE	6,985,000

1/ Reflects $350,000 proposed transfer to the project.

EFFECTIVE DATE
01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, MEMPHIS DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, EAST MEMPHIS DIST
4 FEB 1986

PROJECT, WEST KENTUCKY TRIBS

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APPROPRIATION TITLE: FC, MR&T, AR, IL, KY, LA, MS, MO and TN
FLOOD CONTROL MR&T

CLASSIFICATION: Construction
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS	1,838,000				1,838,000
OTHER COSTS					
LANDS AND DAMAGES	2,405,000				2,405,000
RELOCATIONS	2,742,000				2,742,000
OTHER					

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EFFECTIVE DATE 01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, MEMPHIS DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, EAST MEMPHIS DIST

PROJECT, WEST KENTUCKY TRIBS

4 FEB 1986

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APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO and TN - Construction

PROJECT: Bayou Cocodrie and Tributaries, Louisiana (Continuing)

LOCATION: The project is located in Rapides, Avoyelles, Evangeline, and St. Landry Parishes in central Louisiana. It consists of diversion channels and channel improvements between the Bayou Rapides Control Structure near Alexandria and the West Atchafalaya Floodway near Courtableau.

AUTHORIZATION: Flood Control Act of 1941 and Water Resources Development Act of 1974.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 1.5 to 1 at 2-1/2 percent based on 1 October 1985 price levels. The project was authorized on 18 August 1941 and initial construction funds were provided in FY 1945. The benefit to cost ratio was initially computed in FY 1961 and the benefit to cost ratio at that time was 1.6 to 1. The benefit to cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost	STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Estimated Federal Cost		$19,839,000				
Estimated Non-Federal Cost		6,984,000		Entire Project	57	Indefinite 2/
Cash Contribution	$1,164,000					
Other	5,820,000					
Total Estimated Project Cost		$26,823,000	1/			
Allocations to 30 September 1985		4,774,000				
Conference Allowance for FY 1986		150,000				
Allocation for FY 1986		150,000				
Allocations to Date		4,924,000	24			
Allocation Requested for FY 1987		75,000	25			
Scheduled Balance to Complete after FY 1987		200,000				
Unscheduled Balance to Complete after FY 1987		14,640,000	2/			

1/ Excludes future inflation pending development of a schedule for remaining work.
2/ Engineering and Design for the Bayou Cocodrie and Tributaries project is scheduled to be completed in 1990, after which it will be considered for construction consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

Division: Mississippi River Commission District: New Orleans Region: Lower Mississippi
Bayou Cocodrie and Tributaries, LA

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PHYSICAL DATA

Lands and Damages: 1,131 acres

Relocations: Roads -
Modify 34 bridges
2.0 miles
Railroads -
Modify 6 bridges

Channels and Canals:	Length Miles
Bayou Cocodrie Channel Enlargement	22.6
Bayou Cocodrie Channel Overland Cut	9.9
Bayou Cocodrie Clearing and Snagging	10.0
Bayou Cocodrie Area Diversion Channel	23.4
Bayou Courtableau Channel Enlargement	19.6
Bayou Boeuf Channel Realignment and Enlargement	8.4
Bayou Boeuf Area Diversion Channel	11.1
Bayou Boeuf Channel Enlargement	14.9

Flood Control and Diversion Structures:

Bayou Rapides Control Structure - 10 feet by 10 feet reinforced concrete twin box culvert, 240 feet long.

Bayou Lamourie Control Structure - 10 feet by 10 feet reinforced concrete box culvert, 202.5 feet long.

Lecompte Control Structure - An ungated spillway with a concrete weir, 128 feet long.

Additional culverts through the West Atchafalaya Basin Protection Levee as necessary for the increased flow.

JUSTIFICATION: Construction of the project will produce lowering of flood heights and provide facilities for improving the normal drainage of the large areas of land now held in a non-productive status or in a state of limited development because of inadequate drainage. The facilities for diversion of flow from the Bayou Rapides area will provide relief from floodwaters during high stages of Red River when the capacity of the pumping station at Alexandria, LA, is exceeded. The overall project will reduce the flood losses on approximately 61,700 acres of crop and pasture land and the reduction of flooding will permit the increased utilization of about 39,500 acres of cleared and wooded land; irrigation benefits will accrue to about 2,000 acres. At the lower end of the project, construction of an outlet and enlargement of Bayou Courtableau from 3.7 miles north of Washington to Courtableau will resolve the flood problem in the area, accelerate outflow and produce lowered durations as well. Construction of additional culverts through the west protection levee will accommodate the increased flow into the West Atchafalaya Floodway. Total average annual benefits and designated redevelopment areas are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$1,326,000
Irrigation	22,000
Area Redevelopment	263,000
Total	$1,611,000

State and Parish	Redevelopment Areas (PL 89-136) Title	Subsection
Louisiana		
Allen	IV	(1)
Avoyelles	IV	(2,8)
Evangeline	IV	(8)
Grant	IV	(8)
Natchitoches	IV	(1,2)
Pointe Coupee	IV	(1)
Rapides	IV	(8)
St. Landry	IV	(8)
Vernon	IV	(8)

FISCAL YEAR 1987: The requested amount of $75,000 will be applied as follows:

Engineering and Design	$65,000
Supervision and Administration	10,000
Total	$75,000

The funds requested will be used for complying with comments to the General Design Memorandum and Environmental Impact Statement, and for preparation of the Real Estate Design Memorandum for enlargement of Bayou Courtableau.

NON-FEDERAL COST: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $2,154,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at 3,666,000; pay five percent of the project cost allocated to flood control presently estimated at $1,164,000; and bear all costs of operation, maintenance and replacement of the project features presently estimated at $259,000 annually.

STATUS OF LOCAL COOPERATION: Assurances for the project, consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, will be obtained prior to the initiation of construction.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $19,839,000 is a decrease of $6,161,000 from the latest estimate ($26,000,000) submitted to Congress. This change includes decreases of $6,526,000 based on adjustments between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, partially offset by increases of $365,000 due to higher price levels.

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STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The draft Environmental Impact Statement is scheduled for submission to the Environmental Protection Agency in the first quarter of FY 1987. The final statement is scheduled for submission to the Environmental Protection Agency in the fourth quarter of FY 1987.

There are no requirements to be met under Section 404 of the Clean Water Act since current project planning does not indicate deposition of dredged material into navigable waters or wetlands.

The proposed project will improve the efficiency of the existing drainage system. It will, however, result in the increased turbidity of streams and bayous within the project area and the probable overall reduction of aquatic habitat due to increased drainage capabilities. Dredging operations will also destroy or temporarily disrupt existing stream bottoms. This will subsequently affect aquatic organisms which occupy higher positions within the aquatic food web. The disposal of dredged material on land sites will directly reduce forest acreage which supports various terrestrial animal populations. The permanence and severity of this habitat reduction will depend upon the amount of material to be excavated, the frequency of maintenance dredging, and the availability of adjacent unoccupied habitats. Implementation of the project and its attendant drainage improvements will also increase the feasibility for more intensified land use practices. This will likely result in the elimination of some area wetlands, further reduce existing forest habitat, and degrade surface water quality. Turbidity and pesticide levels may increase. The additional culverts authorized to be placed in the West Atchafalaya Basin Protection Levee could produce increased flow into the West Atchafalaya Floodway which could raise pesticide levels. These pesticides would enter the food chain and could be especially significant in the Henderson Lake area where an extensive sport fishery exists. During the planning stages for the authorized work, remedies for any adverse effects are being studied.

OTHER INFORMATION: Initial construction funds were appropriated in FY 1945.

The originally authorized Washington-Courtableau Diversion Channel was opposed by the St. Landry Parish Police Jury on the basis that it would sever land ownerships and that rights-of-way would be costly. Instead, the St. Landry Police Jury and residents of the area favored enlargement of Bayou Courtableau.

Section 87 of the Water Resources Development Act of 1974 provides in part for the enlargement of Bayou Courtableau from Washington to West Atchafalaya Basin Protection Levee in lieu of the authorized Washington to Courtableau Diversion Channel.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Mississippi River Commission
District: New Orleans

Project: Bayou Cocodrie and Tributaries, Louisiana

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline	Cumulative Changes	Last	Incremental Change	Current
	(1)	(2)	(3)	(4)	(5)
Federal Cost	6,220		26,000		19,839
(Price Level)	(Jul 65)		(Oct 84)		(Oct 85)
Reason for Change		(19,780)		(-6,161)	
a. Price Escalation		13,516		365	
b. Design Changes		1,400			
c. Additional Function Added Under General Authorization					
d. Authorized Modification		2,950			
e. Post-Contract Award and Other Estimating Adjustments		869			
f. Schedule Changes					
g. Sundry		10		(-6,526) 1/	
h. Real Estate		1,035			

1/ Decreased $6,526 based on adjustments between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

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APPROPRIATION TITLE
FC,MR&T,AR,IL,KY,LA,MO,MS,&TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
COMPLETED WORK	3,548,000	3,548,000			
LANDS & DAMAGES	2,154,000	0	0	0	2,154,000
RELOCATIONS	3,686,000	0	0	0	3,686,000
CHANNELS & CANALS	19,683,000	0	0	0	19,683,000
FLD CNTRL & DIV STRU	3,846,000	0	0	0	3,846,000
ENGR & DESIGN	1,688,000	1,192,000	174,000	65,000	257,000
SUPERVISION & ADMIN	1,238,000	117,000	17,000	10,000	1,094,000
FED & NON-FED FUNDS					
TOTAL COST - SCHED	26,823,000	4,857,000	191,000	75,000	21,700,000
UNDELIVERED ORDERS	0	32,000	-32,000	0	0
TOTAL OBLIGATIONS	0	4,889,000	159,000	75,000	21,700,000
FEDERAL FUNDS					
TOTAL COST-SCHED	19,839,000	4,733,000	191,000	75,000	14,840,000
UNDELIVERED ORDERS		32,000	-32,000	0	0
TOTAL OBLIGATIONS		4,765,000	159,000	75,000	14,840,000
NON-FEDERAL FUNDS					
TOTAL COST SCHED	6,984,000	124,000	0	0	6,860,000
UNDELIVERED ORDERS		0			0
TOTAL OBLIGATIONS		124,000	0	0	6,860,000

EFFECTIVE DATE
01 JAN 86

DIVN,MISS. RIVER COMM.
DIST,NEW ORLEANS DISTRICT

REGION, LMV
BASIN, COASTAL LOUISIANA

PROJECT,BAYOU COCODRIE AND TRIBS

4 FEB 1986
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APPROPRIATION TITLE
FC,MR&T,AR,IL,KY,LA,MO,MS,&TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

METHOD OF FINANCING	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FEDERAL FUNDS					
ALLOCATIONS		4,774,000	150,000		
UNOB CARRYOVER PFY			9,000		
TOTAL AVAIL FOR OBL		0	159,000		
APPROPRIATION REQUIRED				75,000	14,840,000
				FUTURE FEDERAL REQUIREMENTS	
				FISCAL YEAR 1988	100,000
				FISCAL YEAR 1989	50,000
				FISCAL YEAR 1990	50,000
				FISCAL YEAR 1991	0
				REMAINING BALANCE	14,640,000
NON-FEDERAL COSTS					
CASH CONTRIB	1,164,000	4,000			1,160,000
OTHER COSTS	5,820,000	120,000			5,700,000
TOTAL NON-FED COSTS	6,984,000	124,000			6,860,000
TOTAL FED(CORPS) & N/F	26,823,000	4,898,000	150,000	75,000	21,700,000

EFFECTIVE DATE 01 JAN 86

DIVN,MISS. RIVER COMM. DIST,NEW ORLEANS DISTRICT

REGION, LMV
BASIN, COASTAL LOUISIANA

PROJECT,BAYOU COCODRIE AND TRIBS

4 FEB 1985

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APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO, and TN - Construction

PROJECT: Yazoo Basin, Mississippi (Continuing)

LOCATION: The project is located in Mississippi and extends generally from Memphis, Tennessee, southward to Vicksburg, Mississippi, and from the escarpment at Greenwood, westward to the Mississippi River.

AUTHORIZATION: Flood Control Acts of 1936, 1937, 1938, 1941, 1944, 1946, 1950, 1962, 1965, and Water Resources Development Act of 1974.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 3.2 to 1 at 2-1/2 percent. This project feature was authorized in Fiscal Year 1936 and initial construction funds were provided in Fiscal Year 1936. The authorized comprehensive review of the Mississippi River and Tributaries project, contained in House Document 308/88/2 as updated to reflect 1965 conditions and price levels, is considered to be the base estimate for the Yazoo Basin. The benefit-cost ratio for the Yazoo Basin components computed for the base estimate was 2.0 to 1.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost
Estimated Federal Cost	$1,290,500,000	
Estimated Non-Federal Cost:	30,325,000	
Cash Contribution $22,379,000		
Other 7,946,000		
Total Estimated Project Cost	$1,320,825,000	
Allocations to 30 September 1985	416,067,000	
Conference Allowance for FY 1986	36,500,000	
Allocation for FY 1986	29,900,000 1/	
Allocations to Date	445,967,000	35
Allocation Requested for FY 1987	24,000,000	36
Scheduled Balance to Complete After FY 1987	741,992,000	
Unscheduled Balance to Complete After FY 1987	78,541,000 2/	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	62	Jul 2013
Yazoo City	100	-
Belzoni	100	-
Will M. Whittington Auxiliary Channel	92	Aug 1991
Sardis Lake	98	Sep 1986
Arkabutla Lake	100	-
Enid Lake	99	Sep 1986
Grenada Lake	98	Indefinite 2/

1/ Reflects $6,250,000 reduction assigned as savings and slippages and $350,000 proposed transfer from the project.

2/ See OTHER INFORMATION.

Division: Mississippi River Commission District: Vicksburg Region: Lower Mississippi Valley Basin, Mississippi

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	PERCENT COMPLETE	COMPLETION SCHEDULE
Greenwood	97	Sep 1995
Upper Yazoo Projects	17	Jul 2013
Main Stem	80	Aug 2004
Tributaries	64	May 2010
All Work Except Ascalmore-Tippo and Opossum Bayous	67	May 2010
Ascalmore-Tippo and Opossum Bayous	27	Sep 1999
Demonstration Erosion Control	10	Sep 1987
Big Sunflower River, Etc., Including Steele Bayou	50	Dec 2004
Yazoo Backwater Including Muddy Bayou Control Structure	45	2/
Streambank Erosion Control Evaluation and Demonstration	100	

PHYSICAL DATA

Yazoo City:
- Lands and Damages: 361 acres
- Relocations: 1.1 miles roads
- Levees: 1.8 miles
- Pumping Plant: 1 - 540 cubic feet per second

Belzoni:
- Lands and Damages: 3.3 acres
- Levees: 0.1 mile levee and 0.6 mile floodwall

Will M. Whittington Auxiliary Channel:
- Lands and Damages: 11,996 acres
- Relocations:
  - Roads 3.0 miles and 12 bridges
  - Railroads 0.4 mile and 1 bridge
- Fish & Wildlife Facilities: 1 water control structure
- Channels: 30.8 miles
- Levees: 61.3 miles

Sardis Lake:
- Lands and Damages: 98,770 acres
- Relocations:
  - Roads 3.2 miles and 1 bridge
  - Railroads 3.2 miles and 1 bridge
- Reservoir: 58,500-acre pool area
- Dam: Earthfill, 15,300 feet long; 97 feet average height
- Roads, Railroads, and Bridges: 7.6 miles roads and 8 bridges
- Recreation Facilities: 19 sites
- Buildings: 4

2/ Engineering and design on the first item of construction for the Yazoo Backwater pump was completed in FY 1985 and funds were appropriated in FY 1986 for construction of the channel work; however, the remaining work is unscheduled pending a decision to initiate construction consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership. Remaining work on Rocky Bayou is unscheduled pending a decision to initiate construction consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

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Arkabutla Lake:
- Lands and Damages: 52,629 acres
- Relocations:
  - Roads: 5.5 miles and 5 bridges
  - Railroads: 5.8 miles and 2 bridges
- Reservoir: 33,400-acre pool area
- Dam: Earthfill, 11,500 feet long; 67 feet average height
- Roads: 4 miles
- Channel and Canals: 1.5 miles
- Recreation Facilities: 11 sites
- Buildings: 4

Enid Lake:
- Lands and Damages: 43,870 acres
- Relocations:
  - Roads: 19.1 miles and 9 bridges
- Reservoir: 28,000-acre pool area
- Dam: Earthfill, 8,400 feet long; 85 feet average height
- Roads: 1 mile
- Recreation Facilities: 10 sites
- Buildings: 4

Grenada Lake:
- Lands and Damages: 90,356 acres
- Relocations:
  - Roads: 83.2 miles and 47 bridges
  - Railroads: 21.6 miles and 21 bridges
  - 1 Cemetery
- Reservoir: 64,600-acre pool area
- Dam: Earthfill, 13,900 feet long; 80 feet average height
- Roads: 4.5 miles and 1 bridge
- Recreation Facilities: 20 sites
- Buildings: 4

Greenwood:
- Lands and Damages: 1,435 acres
- Relocations:
  - Roads: 0.5 mile and 4 bridges
- Bank Stabilization: 0.8 mile
- Channels: Big Sand Creek Diversion (2.9 miles)
- Levees and Floodwalls: 28.4 miles, height 4-6 feet
- Pumping Plants: Storm Water: 3-capacity 67, 89, and 675 cubic feet per second

Upper Yazoo Projects:
- Lands and Damages: 14,130 acres
- Relocations:
  - Roads: 51 miles and 3 bridges
- Channels: 179 miles; bottom width of 75 feet to 150 feet
- Levees: 209.8 miles levees and 0.2 mile floodwall, average height 6.5 feet, 108 drainage structures and 1 diversion structure.
- Flood Control and Diversion Structure: One control structure with three 32-foot-wide gate bays.
- Bank Stabilization: 1.3 miles

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Yazoo Basin, Mississippi

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Main Stem:
- Lands and Damages: 16,550 acres
- Relocations:
  - Roads 28.9 miles and 10 bridges
  - Railroads 1.2 miles
- Channels: 43 cutoffs, 251 miles channel clearing and 21 miles channel enlargement (Total miles 288.3)
- Levees: 156.1 miles; variable height, 3 to 28 feet.
- Bank Stabilization: 7,700 feet

Tributaries:

All Work Except Ascalmore-Tippo and Opossum Bayous
- Lands and Damages: 40,174 acres
- Relocations:
  - Roads 7.3 miles and 57 bridges
  - Railroads 2.2 miles and 6 bridges
- Channels: 416.6 miles
- Levees: 147.8 miles; variable height, 3 to 25 feet
- Pumping Plant: 1 storm water (McKinney Bayou) 250 cubic feet per second; 3 Pelucia Creek Pumping Plants, 75, 15, and 10 cubic feet per second
- Bank Stabilization: 5.8 miles
  - 9 Grade Control Structures

Ascalmore-Tippo and Opossum Bayous:
- Lands and Damages: 2,601 acres
- Relocations:
  - Roads 11 bridges
  - Railroads 1 bridge
- Channels: 50.6 miles
- Levees: 12.6 miles; average height 7 feet

Demonstration Erosion Control:

Batupan Bogue Watershed:
- Bank Stabilization: 16.9 miles
  - Major Grade Control Structures 15
  - Minor Grade Control Structures 200
  - Floodwater Retarding Structures 10

Otoucalofa Creek Watershed:
- Bank Stabilization: 2 miles
  - Major Grade Control Structures 1
  - Minor Grade Control Structures 75
  - Floodwater Retarding Structures 15
  - Channel Cleanout 5 miles

Hotophia Creek Watershed:
- Bank Stabilization: 5 miles
  - Major Grade Control Structures 3
  - Minor Grade Control Structures 20

Hickahala and Senatobia Creek Watershed:
- Bank Stabilization: 2 miles
  - Major Grade Control Structures 6
  - Minor Grade Control Structures 40
  - Channel Cleanout 15 miles

Black Creek Watershed:
- Bank Stabilization: 8 miles
  - Major Grade Control Structures 12
  - Minor Grade Control Structures 206
  - Floodwater Retarding Structures 9
  - Channel Cleanout 1.5 miles

Long Creek Watershed:
- Bank Stabilization: 2 miles
  - Major Grade Control Structures 4
  - Minor Grade Control Structures 69
  - Floodwater Retarding Structures 3
  - Channel Cleanout 0.5 mile

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Big Sunflower River, Etc., Including Steele Bayou:
- Lands and Damages: 34,931 acres
- Relocations:
  - Roads 2.0 miles and 68 bridges
  - Railroads 1 Bridge
- Fish & Wildlife Facilities: 9 water control structures
- Channels: (miles)

Big Sunflower River	216
Quiver River	81
Steele Bayou	100
Deer Creek	7
Bogue Phalia	95
Little Sunflower River	28
Hushpuckena River	28
Tributaries	172
Gin and Muddy Bayous	12.3
Total	739.3

- Levees: 9.0 miles, average height 7 feet; 4 gated culverts and 4 fixed crest spillways
- Bank Stabilization: 1.0 mile

Yazoo Backwater Including Muddy Bayou Control Structure:
- Lands and Damages: 30,203 acres
- Relocations:
  - Roads 24.3 miles and 2 bridges
  - Railroads 0.8 mile and 1 bridge
- Fish and Wildlife Facilities:
  - 2 Water Control Structures
  - 7 Greentree Reservoirs
  - 5 Slough Control Areas
  - 4 Pumping Stations

Yazoo Backwater Including Muddy Bayou Control Structure: (Cont)
- Channels: 38.9 miles, average depth, 25 feet
- Levees: 78.5 miles levees, variable height, 5 to 30 feet; 5 floodgates, openings vary in size from 72 square feet to 2,700 square feet.
- Recreation Facilities: 2 boat launching ramps
- Floodway Control and Diversion Structures:
  - Muddy Bayou Control Structure (opening size 480 square feet)

Rocky Bayou Area:
- Lands and Damages: 1,140 acres
- Relocations:
  - Roads 7.0 miles
- Levees: 19.0 miles

Yazoo Backwater Pump:
- Lands and Damages: 6,810 acres
- Relocations:
  - Roads 1.0 mile and 1 bridge
- Channels: 1.9 miles, variable height 7 to 30 feet
- Pumping Plant: One 10,000 cubic feet per second

Streambank Erosion Control Evaluation and Demonstration:
- Bank Stabilization: 65.0 miles

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JUSTIFICATION: The Yazoo Headwater feature will protect 1,209,000 acres against overflow, substantially benefit 303,000 acres and protect Greenwood, Belzoni, Yazoo City and numerous smaller communities. Channel improvement work on the Big Sunflower River and its tributaries will protect 195,000 acres against the design flood and an additional 395,000 acres will be benefited because of improved drainage conditions. Also, approximately 368,000 acres in the Yazoo Backwater Area will be protected against all but the larger floods and substantial benefits will accrue to an additional 224,000 acres from improved drainage. Improvements by local interests have kept pace with the degree of protection afforded, large sums having been spent on clearing lands, constructing lateral drainage systems and converting farming practices to more modern methods. Had there been no protection in 1958, the floods of April-June and September would have caused damages amounting to $21,598,000. Should these floods recur under present conditions, but with the flood control works assumed complete, damages amounting to $144,058,000 would be prevented. In addition, the four Yazoo Basin lakes are being used extensively for recreation. A continual expansion of facilities is required to meet public demand for recreation opportunities. Visitor-day attendance increased from 2,857,000 in calendar year 1958 to 9,952,850 in 1985.

The total average annual benefits and designated redevelopment areas are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$287,555,000
Fish and Wildlife	5,406,000
Recreation	13,255,000
Area Redevelopment	7,611,000
Bank Stabilization Works	3,581,000
Total	$317,408,000

Redevelopment Areas (PL 89-136)

State and County or Parish	Title	Subsection	State and County or Parish	Title	Subsection
Arkansas			Mississippi		
Chicot	IV	(2,8)	Attala	IV	(8)
Crittenden	IV	(8)	Benton 1/	IV	(2,8)
Desha	IV	(8)	Bolivar	IV	(2)
Phillips	IV	(2,8)	Calhoun	IV	(8)
Louisiana					
Madison	IV	(2,8)			

Yazoo Basin, Mississippi

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Redevelopment Areas (PL 89-136)

State and County or Parish	Title	Subsection
Mississippi (cont)		
Carroll	IV	(2)
Chickasaw 1/	IV	(8)
Choctaw 1/	IV	(2)
Claiborne	IV	(2,8)
Coahoma	IV	(2,7,8)
De Soto	IV	(8)
Grenada	IV	(8)
Holmes	IV	(2,7,8)
Humphreys	IV	(2,8)
Issaquena	IV	(2,8)
Panola	IV	(8)
Pontotoc 1/	IV	(8)
Quitman	IV	(2,8)
Sharkey	IV	(2,7,8)
Sunflower	IV	(2,8)
Tallahatchie	IV	(2,7,8)
Tate	IV	(8)
Tunica 1/	IV	(2,7,8)
Union 1/	IV	(8)
Warren	IV	(8)
Washington	IV	(8)
Webster 1/	IV	(8)
Yalobusha	IV	(2,8)
Yazoo	IV	(2,8)
Tennessee		
Fayette	IV	(2,8)
Shelby	IV	(6)

1/ In Appalachian Region

FISCAL YEAR 1987: The requested amount of $24,000,000 will be applied as follows:

Upper Yazoo Projects:	
Initiate: Channel and Levee Item 3A	$ 6,552,000
East Hollie Lake Drainage Structure	627,000
Initiate and Complete: Utility Relocation, East Hollie Lake	6,000
Continue: Lands and Damages	344,000
Fort Pemberton Control Structure	4,950,000
Engineering and Design	1,000,000
Supervision and Administration	721,000
Total	$14,200,000

Yazoo Basin, Mississippi

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These funds will be used to initiate channel and levee Item 3A and the East Hollie Lake drainage structure contract; initiate and complete one utility contract; and continue land acquisition and the Fort Pemberton control structure.

The unit, when completed, will reduce flood stages on the Tallahatchie and Yazoo Rivers by as much as 5 feet. This reduction will permit construction of lower levees along these rivers. The Upper Yazoo Projects will benefit several hundred thousand acres in seven counties by reducing the frequency and duration of flooding and improve drainage to lands along the main stem rivers as a result of the lower flow line.

Main Stem:

Continue: Lands and Damages	$ 332,000
Complete: Bee Lake Drainage Structure and Levee Section	1,258,000
Engineering and Design	400,000
Supervision and Administration	110,000
Total	$2,100,000

The requested funds will be used to continue land acquisition and complete one drainage structure. The revised flow line established for the Mississippi River Levees has resulted in inadequate levee heights on the completed main stem project levees. The completed levees from Yazoo City to Marksville will require raising. Preliminary planning will be accomplished on this enlargement work.

Tributaries:
All Work Except Ascalmore-Tippo and Opossum Bayous:

Initiate: 1 Bridge Relocation, Pelucia Creek, Levee Item 2	$1,290,000
Pelucia Creek, Levee Item 2	230,000
Initiate and Complete: 2 Utility Relocations, Pelucia Creek, Levee Item 2	49,000
Continue: Land and Damages	491,000
Complete: Pelucia Creek, Levee Item 1A	640,000
Engineering and Design	700,000
Supervision and Administration	200,000
Subtotal	$3,600,000

Yazoo Basin, Mississippi

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Funds will be used to initiate one bridge relocation contract and one levee contract; initiate and complete two utility relocation contracts; continue land acquisition; and complete one levee contract.

This unit, when completed, will alleviate flooding and improve drainage for extensive farmland acreage by enlarging channels, snagging and clearing and/or constructing levees along each side of the many tributaries that enter the Yazoo or Tallahatchie Rivers from the hill escarpment or lie entirely in the delta.

Tributaries	
Ascalmore-Tippo and Opossum Bayous:	
Engineering and Design	$ 185,000
Supervision and Administration	15,000
Subtotal	$ 200,000
TOTAL - TRIBUTARIES	$3,800,000

Funds will be used for preparation of Operation and Maintenance Manual required for the Tallahatchie River control structure and for sediment and channel stability studies. Ascalmore-Tippo Bayou, to be completed in FY 1987, will provide an improved outlet for flood control and drainage of about 155 square miles of delta lands in Tallahatchie, Grenada, and Leflore Counties. The Opossum Bayou Channel Improvement, when completed, will directly benefit approximately 25,000 acres of land of which about 15,000 acres are cleared. In addition, improved drainage will be provided on 15,000 to 20,000 additional acres in the upper portion of the area.

Big Sunflower River, Etc., Including Steele Bayou:		
Initiate:	Steele Bayou, Channel Item 66B, Swan Lake	$ 500,000
Continue:	Lands and Damages	50,000
	Mitigation Reforestation, Item 55A	20,000
	Steele Bayou, Channel Item 66A, Swan Lake	1,586,000
Engineering and Design		425,000
Supervision and Administration		219,000
Total		$2,800,000

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Funds will be used to initiate one channel contract; continue land acquisition, mitigation reforestation, and one channel item contract.

This unit, when completed, will alleviate flooding and improve drainage on approximately 590,000 acres of fertile delta lands, and urban areas in the vicinity of Greenville, Mississippi.

Yazoo Backwater Including Muddy Bayou:	
Initiate and Complete: Power Supply, Platforms #1 and 3	$ 401,000
Pump Station, Platform #1	237,000
Complete: Pump Station, Platform #3	87,000
Engineering and Design	295,000
Supervision and Administration	80,000
Total	$1,100,000

Funds will be used to initiate and complete the pump station, platform #1 and the power supply contract for platforms #1 and 3; and complete one pump station, platform #3. This work continues to meet partial mitigation for work in the Yazoo Backwater.

TOTAL - YAZOO BASIN	$24,000,000

NON-FEDERAL COST:

All Work Except Rocky Bayou and Yazoo Backwater Pumping Plant:

Local interests are to contribute 25 percent of the cost of fish and wildlife enhancement measures as follows:

Will M. Whittington	$208,000
Big Sunflower River, Etc.	474,000
Yazoo Backwater	102,000
Total Contribution	$784,000

Yazoo Basin, Mississippi

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The cost to local interests for operation and maintenance of the Big Sunflower River Unit channels is estimated to be $644,000 annually and, in addition, they will maintain fish and wildlife facilities estimated at $38,000 annually. The cost to local interests for maintenance of levees in the Yazoo Backwater Unit (excluding Rocky Bayou and Yazoo Backwater Pumping Plant) is estimated to be $288,000 annually and, in addition, they will maintain fish and wildlife facilities estimated at $23,000 annually. Maintenance of works in the Yazoo Headwater Unit is a Federal responsibility except that local interests will maintain fish and wildlife facilities at an estimated annual cost of $56,000. However, local interests have agreed to operate and maintain the McKinney Bayou Pumping Plant and the sanitary pumping plants and storm drainage structures at Yazoo City, Greenwood, and Belzoni. The annual cost of operation and maintenance of these facilities is estimated at $74,000.

Local interests provided $41,000 for rights-of-way prior to being relieved of this responsibility by the 1950 Flood Control Act. They have spent $23,000,000 prior to initiation of construction of authorized Federal improvements on local drainage improvements and that they will spend an additional $79,500,000 for constructing connecting ditches, main laterals, and on-farm drainage improvements to make the Federal project effective.

Rocky Bayou and Yazoo Backwater Pumping Plant:

Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, and rights-of-way, presently estimated at $4,787,000; modify or relocate buildings, utilities, roads and other facilities, except railroad bridges, where necessary in the construction of the project presently estimated at $3,118,000, pay 5 percent of the costs allocated to flood control presently estimated at $21,595,000.

Yazoo Backwater, Rocky Bayou	
Cash Contributions	$1,593,000
Other Costs	2,907,000
Lands and Damages	1,534,000
Relocations	1,373,000
Other	0

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Local interests are required to bear the cost of all operation and maintenance currently estimated at $29,000 annually.

Yazoo Backwater Pumping Plant	
Cash Contributions	$20,002,000
Other Costs	4,998,000
Lands and Damages	3,253,000
Relocations	1,745,000
Other	0

Local interests are required to bear the cost of all operation and maintenance currently estimated at $1,000,000 annually.

STATUS OF LOCAL COOPERATION:

Flood Control:

Local cooperation is not required for the Yazoo Headwater Unit.

For the Yazoo Backwater unit, assurances of local cooperation have been received and accepted from the Board of Mississippi Levee Commissioners and the Yazoo-Mississippi Delta Levee District. Supplemental assurances covering the requirements of local cooperation as provided for in the "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970," (PL 91-646) were accepted 7 August 1972.

Assurances to operate the Big Sunflower River Unit and perform minor maintenance have been received and accepted from the Yazoo-Mississippi Delta Levee District and the Board of Mississippi Levee Commissioners. Formal assurances for work in the Steele Bayou Basin were accepted 8 June 1972 without the requirement that local interests "construct or have constructed by others, the necessary associated interior drainage works." The requirements of PL 91-646 are a Federal responsibility.

Assurances of local cooperation for the Streambank Erosion Control Evaluation and Demonstration have been requested, received, and accepted from the four sponsoring agencies.

Assurances for the Rocky Bayou and Yazoo Backwater Pumping Plant separable element(s) consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership will be obtained prior to the initiation of construction.

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Recreation:

The State of Mississippi, which provided assurances that it would operate and maintain Corps constructed recreation facilities at the Yazoo Basin lakes, has notified the Vicksburg District that it is unable to fully comply with the assurances in a formal 1967 agreement. Funds for construction of additional recreation facilities at two sites in the Yazoo Basin were appropriated in Fiscal Years 1981 and 1982. Because of the inability of the State of Mississippi to fully comply with its previous assurances, construction of these additional recreation facilities at the Upper Torrance Landing and Skuna-Turkey Creek sites at Grenada Lake have been delayed indefinitely.

Fish and Wildlife:

Assurances will be requested for Yazoo Headwater, Yazoo Backwater, and Big Sunflower River when planning is more advanced.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $1,290,500,000 is a decrease of $124,500,000 over the latest estimate ($1,415,000,000) submitted to Congress. This change includes decreases of $1,252,000 for adjustments in the estimated inflation allowance through the construction period, $93,693,000 based on more detailed planning of construction and relocations, $3,138,000 based on contract awards and negotiations, and $29,500,000 based on adjustments between Federal and non-Federal cost estimates consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership. These decreases were partially offset by increases of $333,000 based on completed work, and $2,500,000 in Engineering and Design and $250,000 Supervision and Administration based on a recent reanalysis of requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: Environmental Impact Statements have been filed with the Council on Environmental Quality or with the Environmental Protection Agency as follows:

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Project Unit	Draft	Final
Sardis Lake	16 December 1977	20 February 1979
Arkabutla Lake	16 December 1977	20 February 1979
Enid Lake	16 December 1977	20 February 1979
Grenada Lake	16 December 1977	20 February 1979
Greenwood	24 January 1975	16 January 1976
Upper Yazoo Projects	24 January 1975	16 January 1976
Main Stem	24 January 1975	16 January 1976
Tributaries:		
All Work Except Ascalmore-Tippo and Opossum Bayous	24 January 1975	16 January 1976
Ascalmore-Tippo and Opossum Bayous	15 August 1973	6 June 1975
Big Sunflower River, Etc., Including Steele Bayou	24 January 1975	16 January 1976
Yazoo Backwater (Including Muddy Bayou Control Structure)	24 January 1975	16 January 1976
Demonstration Erosion Control	1/	1/

1/ The appropriate National Environmental Policy Act documentation will include preparation of an Environmental Impact Statement if environmental impacts are determined to be significant.

The provisions of Section 404 of the Clean Water Act will be followed as detailed plans for individual work items are developed. The schedule for compliance with Section 404 requirements for items to be initiated in FY 1987 follows:

Item	Preliminary Evaluation	Issuance of Public Notice	State Certification	Date of Signature by District Engineer on Report
Upper Yazoo Projects				
Channel and Levee Item 3A	N/A	Jun 86	Aug 86	Sep 86
East Hollie Lake Drainage Structure	N/A	Jun 86	Aug 86	Aug 86
Tributaries, All Except				
Pelucia Creek, Bridge Relocation, Item 2	N/A	26 May 82	8 Jul 82	22 Jul 82
Pelucia Creek, Levee Item 2	N/A	26 May 82	8 Jul 82	22 Jul 82

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Item	Preliminary Evaluation	Issuance of Public Notice	State Certification	Date of Signature by District Engineer on Report
Big Sunflower River, Etc.				
Steele Bayou, Channel Item 66B, Swan Lake	N/A	21 May 84	25 Jun 84	12 Jul 84
Yazoo Backwater Including Muddy Bayou				
All Fish and Wildlife Contracts Associated at Greentree	10 Aug 77	10 Aug 77	N/A	21 Nov 77

The project increases flood runoff, decreases amount and duration of overflow, reduces agricultural and urban damages, and allows for greater intensification of agricultural and industrial activities. The project will induce further clearing of woodlands for agricultural production. The project will generally reduce dangers to public health and safety by reducing the impacts of floods on local inhabitants. The loss or irreversible commitment of these land and channel areas will reduce forest resources and fish and wildlife habitat. The reduction of overflows has affected water exchange in the Delta's aquatic ecosystems. Increased sediments, levels of turbidity, and entrained agricultural chemicals will adversely affect water quality.

The Mississippi Game and Fish Commission has expressed concern over some features of the proposed channelization plan (Ascalmore-Tippo) and has recommended land acquisition as further mitigation for project-induced fish and wildlife losses.

OTHER INFORMATION:

Funds to initiate construction were appropriated in FY 1936.

Bank Stabilization:

The Public Works Appropriation Acts for Fiscal Years 1971 thru 1986 stated, ". . . that not less than $250,000 shall be available for bank stabilization measures as determined by the Chief of Engineers to be advisable for the control of bank erosion of streams in the Yazoo Basin, including the foothill area, and where necessary such measures shall complement similar works planned and constructed by the Soil Conservation Service and be limited to the areas of responsibility mutually agreeable to the District Engineer and the State Conservationist."

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Bank Stabilization measures have been completed in the Tillatoba Creek Watershed with funds provided in FY 1971 and FY 1972. Work has been completed on Batupan Bogue near Grenada, Mississippi with funds provided in FY 1973 and FY 1974. Bank stabilization measures have been completed on various items of Tillatoba Creek with funds provided in FY 1975, FY 1976, FY 1977 and FY 1978. Work on North Fork Tillatoba Creek was completed with funds provided in FY 1977. Work on South Fork Tillatoba Creek was completed with funds provided in FY 1979. Planning and design were accomplished on Little Tallahatchie Tributaries with funds provided in FY 1980 and FY 1981. Funds provided in FY 1982 were used for construction of the Little Tallahatchie Tributaries item. This authority in FY 1982, FY 1983, FY 1984, and FY 1985 was also the basis for the construction of bank stabilization works under the Greenwood Unit and for the construction of North Fork Tillatoba Creek in FY 1984 and for Point Leflore in FY 1985. Funds provided in FY 1985 were used to initiate Tillatoba Creek, Creek Road Bridge, and funds provided in FY 1986 will be used to complete Tillatoba Creek, Creek Road Bridge, and initiate and complete bank stabilization at Lee Creek awarded 4 December 1985.

Various bank stabilization needs in the Yazoo Basin are being reviewed to determine the most effective use of the funds to be made available for that purpose.

Big Sand and Pelucia Creeks, MS: House Report No. 96-243, Page 102
"The Committee has been advised that construction of the Big Sand Creek levee is underway and that planning of the Pelucia Creek levee is scheduled for completion in the current fiscal year. The Corps is directed to take such actions as are necessary to complete these vital projects as soon as possible."

Big Sand Creek Levee Extension is complete. Planning to modify Big Sand Creek Levees to provide a higher degree of protection to the outlying area of Greenwood, MS, is complete. This work has been divided into two contracts. The first contract, construction of a ring dike north of Big Sand Creek, is complete. The other contract, enlargement of the levee south of the creek, is delayed pending successful negotiation with a railroad company affected by the proposed work. Planning of the Pelucia Creek project is completed, and the first item of work was awarded in June 1985.

Yazoo Backwater, MS: Senate Report No. 98-153, Page 46
"The Committee is aware of the recent flooding in the Yazoo backwater area of the Yazoo Basin project which caused an estimated $19,000,000 in damages that could have been prevented if the Yazoo backwater pumping plant were in place. Accordingly, the Committee has added $2,000,000 to expedite completion of planning and engineering. In an effort to accelerate the schedule for completion of this project the Corps should give consideration to contracting with private sector for engineering and design work."

Yazoo Basin, Mississippi

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A Phase I report on the feasibility of the Yazoo Backwater Pumps was approved on 7 July 1983, and the Phase II GDM was submitted to the Mississippi River Commission and the Office, Chief of Engineers, for review on 25 April 1985. A site for the structure and selection of the pumps and motors has been approved and model studies, soil borings, and detailed design are continuing.

Yazoo Backwater, MS: House Report No. 98-755, Pages 37-38
". . . the Committee has added $1 million and directs the Corps of Engineers to initiate construction in fiscal year 1985 and to accelerate the testing and purchase of pumps and engines so that benefits from the works can be derived as soon as possible . . . ."

Yazoo Backwater, MS: Senate Report No. 98-502, Page 48
". . . the Committee has added $2,000,000 to the budget request and directs the Corps of Engineers to initiate site clearing and inlet and outlet construction in fiscal year 1985 and to accelerate the testing and early purchase of pumps and engines so that benefits from the works can be derived as soon as possible . . . ."

Yazoo Backwater, MS: House Report No. 99-195, Page 44
"The Committee has added $5 million in addition to the FY 1986 Budget Request and directs the Corps to initiate the channel work contract and pump and motor contract in accordance with approved design documents as modified with the discretionary authority of the Chief of Engineers."

Engineering and Design on the channel work contract, which is the first item of construction for the Yazoo Backwater pump is complete . Land acquisition and the channel construction will be initiated.

Rocky Bayou, MS: Senate Report No. 98-153, Page 45
"The Rocky Bayou area consists of 22 square miles, which is used as a highly developed agricultural area. Local interests have constructed a levee and drainage structure system; however, runoff from recent rains has overtopped the existing local levees protecting the Rocky Bayou area and caused considerable damage to the valuable lands protected by that levee. The Committee considers it essential to the protection of the approximately 22 square miles in the area that the authorized Federal project, providing a more secure levee system, be constructed instead of a temporary emergency repair. Therefore, the Committee has provided an additional $2,900,000 and directs the Corps of Engineers to proceed with construction of the authorized project for the Rocky Bayou area of the Yazoo Basin project in Mississippi."

Item 1A of the Rocky Bayou area was awarded in FY 1985, and Item 1B is scheduled for award in March 1986 and completion in September 1986.

Demonstration Erosion Control: House Conference Report No. 98-866, Pages 23-24
". . . The conferees have included $6.2 million for the continuation of the erosion control work program . . . ."

Demonstration Erosion Control: House Report No. 98-755, Pages 36-37
". . . The Committee has included $6.2 million for the continuation of the erosion control work program . . . ."

Demonstration Erosion Control: Senate Report No. 98-502, Page 48
". . . The Committee has provided $500,000 for the Corps of Engineers to develop a comprehensive plan which addresses the needs caused by recent events. The Corps is directed to present the comprehensive plan and recommended solution to the Committees on Appropriations in time for consideration in the 1986 budget."

This report was superseded by the Conference Report above.

The report names and describes some of the watersheds included in the demonstration program. To fulfill this directive, an interagency task force has been formed to plan and oversee the conduct of this program. Development of technical work plans, by the Corps and the Soil Conservation Service, for each of the watersheds is underway. Eleven construction contracts were awarded in FY 1985 with an additional 16 scheduled for FY 1986.

Enid Lake Maintenance: Senate Report No. 98-502, Page 48
". . . The Committee is aware of problems with deteriorating road conditions in the vicinity of the Point Pleasant community at Enid Lake, Miss., and directs the Corps to use $350,000 of available funds to improve the roads. The Committee is also aware of the shoreline erosion problems occurring in the Point Pleasant area and of the willingness of local interests to explore possible solutions to those problems. The Corps is directed to cooperate with local interests in this effort."

Since the Point Pleasant Road is not on Corps of Engineers property, it has been determined that the Corps of Engineers does not have the authority to improve the road.

Demonstration Erosion Control: House Report No. 99-195, Pages 42-45
". . . The bill includes $7.5 million for the Demonstration Erosion Control Program, a continuation of the joint efforts undertaken between the Vicksburg District of the Corps and the Soil Conservation Service in the Yazoo Basin."

Yazoo Basin, Mississippi

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Yazoo Basin, Main Stem, MS: House Report No. 99-195, Pages 44 and 45

"The City of Greenwood, Mississippi, is located at the confluence of the Tallahatchie and Yalobusha Rivers into the Yazoo River. The Committee notes that bank erosion along these Rivers is a serious problem which is threatening Federal and natural levees. Loss of this protection will subject the City of Greenwood to severe flooding with extensive loss to downtown commercial buildings, homes, and improvements such as roads, bridges, and public utilities. In recognition of these needs, an additional $4,000,000 is included for the Yazoo Basin Project, Mississippi, to be used for the stabilization of river banks at Greenwood, Mississippi."

Bank stabilization work will be constructed at three sites along the Greenwood bendway where bank caving is threatening existing flood control improvements. Initial surveys are underway and construction of this work will be initiated in FY 1986 and completed in FY 1987.

2/ The unscheduled balance to complete after FY 1987 is for the following:

Recreation. Remaining recreation facilities are not scheduled pending development of cost-sharing agreements with local interests for construction and non-Federal operation and maintenance, consistent with projects for which recreation facilities are being constructed under the provisions of the Federal Water Project Recreation Act of 1965 (Public Law 89-72), as amended.

Other. Results of studies for the Greenwood Protection Works indicated that increasing the level of flood protection to Greenwood cannot be incrementally justified at this time.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Mississippi River Commission
District: Vicksburg

Project: Yazoo Basin, Mississippi

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline	Cumulative Changes	Last	Incremental Change	Current
	(1)	(2)	(3)	(4)	(5)
Federal Cost (Price Level)	217,000 (Jul 1965)		1,415,000 3/		1,290,500 3/4/
Reason for Change		(1,198,000) 3/		(-124,500) 4/	
a. Price Escalation		557,311		- 1,252	
b. Design Changes		442,170		-101,987 1/	
c. Additional Function Added Under General Authorization		63,735			
d. Authorized Modification		41,054			
e. Post Contract Award and Other Estimating Adjustments		47,829		+ 8,239 2/	
f. Schedule Changes					
g. Sundry		4,053		- 29,500 5/	
h. Real Estate		41,848			

1/ Decreases based on more detailed planning of construction and relocations.
2/ Based on increases of $333 for completed work, $126 for modifications and overruns, $8,168 for construction and relocations, and $2,750 in Engineering and Design based on a reanalysis of requirements. These increases were partially offset by decreases of $3,138 based on contract awards.
3/ Includes an allowance for estimated inflation through the construction period.
4/ Includes a decrease of $1,252 for adjustments in the estimated inflation allowance through the construction period.
5/ Decrease $29,500 based on adjustment between Federal and non-Federal consistent with the cost sharing and financing concepts agreed to by the Administration and the Senator Majority Leadership.

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APPROPRIATION TITLE
FC, MR&T, AR, IL, KY, LA, MS, MO, TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
YAZOO BASIN-COMP UNITS	161,550,000	156,384,000	263,000	0	4,903,000
UPPER YAZOO PROJECTS	361,958,000	44,422,000	6,383,000	14,200,000	296,953,000
LANDS & DAMAGES	27,700,000	2,974,000	823,000	344,000	23,559,000
RELOCATIONS	19,519,000	52,000	108,000	285,000	19,074,000
ROADS,RR,BRIDGES	151,000	0	0	0	151,000
CHANNELS & CANALS	128,591,000	25,473,000	1,015,000	4,750,000	97,353,000
LEVEES&FLOODWALLS	106,371,000	1,391,000	26,000	2,500,000	102,454,000
FLD CONT - DIV STRUC	13,966,000	0	0	4,600,000	9,366,000
BANK STABILIZATION	3,171,000	85,000	2,935,000	0	151,000
ENGR & DESIGN	34,011,000	10,898,000	1,000,000	1,000,000	21,113,000
SUPV & ADMIN	28,478,000	3,549,000	476,000	721,000	23,732,000
MAIN STEM	169,000,000	27,324,000	1,075,000	5,808,000	134,793,000
LANDS & DAMAGES	8,891,000	2,064,000	200,000	332,000	6,295,000
RELOCATIONS	13,391,000	2,153,000	0	0	11,238,000
ROADS,RR,BRIDGES	1,000	1,000	0	0	0
CHANNELS & CANALS	4,887,000	3,953,000	0	0	934,000
LEVEES&FLOODWALLS	114,210,000	11,493,000	32,000	1,258,000	101,427,000
BANK STABILIZATION	3,690,000	369,000	132,000	3,185,000	4,000
ENGR & DESIGN	13,616,000	5,460,000	641,000	643,000	6,872,000
SUPV & ADMIN	10,314,000	1,831,000	70,000	390,000	8,023,000

EFFECTIVE DATE
01 JAN 86

DIVN,MISS. RIVER COMM.
DIST,VICKSBURG DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, YAZOO

PROJECT,YAZOO BASIN

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APPROPRIATION TITLE
FC, MR&T, AR, IL, KY, LA, MS, MO, TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
TRIBS-EXCL ASC,TIP,OPP	204,100,000	58,680,000	5,232,000	3,600,000	136,588,000
LANDS & DAMAGES	21,686,000	6,106,000	110,000	491,000	14,979,000
RELOCATIONS	27,632,000	3,749,000	1,011,000	1,339,000	21,533,000
ROADS,RR,BRIDGES	6,000	6,000	0	0	0
CHANNELS & CANALS	29,278,000	6,272,000	0	0	23,006,000
LEVEES&FLOODWALLS	75,388,000	16,227,000	2,306,000	870,000	55,985,000
PUMPING PLANT	5,067,000	321,000	0	0	4,746,000
BANK STABILIZATION	4,052,000	3,715,000	190,000	0	147,000
CULT RES PRESERVATION	178,000	85,000	0	0	93,000
ENGR & DESIGN	20,645,000	8,766,000	1,399,000	700,000	9,780,000
SUPV & ADMIN	10,168,000	3,433,000	216,000	200,000	6,319,000
DIST. MISC & RECO	10,000,000	10,000,000	0	0	0
ASCALMORE-TIPPO	37,900,000	21,795,000	823,000	1,664,000	13,618,000
LANDS & DAMAGES	3,715,000	1,962,000	25,000	0	1,728,000
RELOCATIONS	6,178,000	2,788,000	168,000	0	3,222,000
CHANNELS & CANALS	10,173,000	3,169,000	250,000	1,048,000	5,706,000
LEVEES&FLOODWALLS	9,983,000	9,212,000	250,000	369,000	152,000
ENGR & DESIGN	6,066,000	3,466,000	100,000	185,000	2,315,000
SUPV & ADMIN	1,785,000	1,198,000	30,000	62,000	495,000

EFFECTIVE DATE
01 JAN 86

DIVN,MISS. RIVER COMM.
DIST,VICKSBURG DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, YAZOO

PROJECT,YAZOO BASIN

4 FEB 1986

1149

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APPROPRIATION TITLE
FC, MR&T, AR, IL, KY, LA, MS, MO, TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
DEMON EROS CONTROL	13,700,000	3,911,000	3,230,000	6,559,000	0
LANDS & DAMAGES	200,000	64,000	66,000	70,000	0
RELOCATIONS	250,000	0	0	250,000	0
BANK STABILIZATION	8,838,000	1,808,000	1,648,000	5,382,000	0
ENGR & DESIGN	2,949,000	1,437,000	1,212,000	300,000	0
SUPV & ADMIN	963,000	175,000	231,000	557,000	0
DIST, MISC & RECO	500,000	427,000	73,000	0	0
BIG SUNFLOWER	108,474,000	33,550,000	1,649,000	2,800,000	70,475,000
LANDS & DAMAGES	6,124,000	2,951,000	64,000	50,000	3,059,000
RELOCATIONS	32,485,000	6,186,000	836,000	0	25,463,000
FISH & WILDLIFE	1,714,000	108,000	37,000	20,000	1,549,000
CHANNELS & CANALS	41,471,000	16,237,000	40,000	2,086,000	23,108,000
LEVEES&FLOODWALLS	7,899,000	0	0	0	7,899,000
BANK STABILIZATION	102,000	102,000	0	0	0
ENGR & DESIGN	10,582,000	6,095,000	403,000	425,000	3,659,000
SUPV & ADMIN	8,097,000	1,871,000	269,000	219,000	5,738,000
BKW INCL MUUDDY BYU	146,102,000	53,915,000	2,038,000	1,100,000	89,049,000
LANDS & DAMAGES	7,775,000	2,085,000	0	0	5,690,000
RELOCATIONS	5,082,000	2,578,000	0	0	2,504,000
FISH & WILDLIFE	8,223,000	3,178,000	1,685,000	725,000	2,635,000
ROADS,RR,BRIDGES	22,000	22,000	0	0	0
CHANNELS & CANALS	7,393,000	7,254,000	0	0	139,000
LEVEES&FLOODWALLS	80,909,000	23,378,000	0	0	57,531,000
RECREATION FACIL	521,000	30,000	68,000	0	423,000
FLD CONT - DIV STRUC	4,365,000	4,126,000	0	0	239,000
ENGR & DESIGN	22,162,000	8,422,000	235,000	295,000	13,210,000
SUPV & ADMIN	9,650,000	2,842,000	50,000	80,000	6,678,000

EFFECTIVE DATE
01 JAN 86

DIVN,MISS. RIVER COMM.
DIST,VICKSBURG DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, YAZOO

PROJECT,YAZOO BASIN

4 FEB 1986 1150

APPROPRIATION TITLE
FC, MR&T, AR, IL, KY, LA, MS, MO, TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
ROCKY BAYOU AREA	18,000,000	2,773,000	1,109,000	0	14,118,000
LANDS & DAMAGES	1,534,000	211,000	0	0	1,323,000
RELOCATIONS	1,373,000	60,000	87,000	0	1,226,000
LEVEES&FLOODWALLS	11,856,000	529,000	892,000	0	10,435,000
CULT RES PRESERVATIO	167,000	155,000	12,000	0	0
ENGR & DESIGN	1,687,000	1,248,000	50,000	0	389,000
SUPV & ADMIN	1,383,000	570,000	68,000	0	745,000
YAZOO BKW PUMP	100,000,000	4,730,000	4,950,000	0	90,320,000
LANDS & DAMAGES	3,253,000	27,000	250,000	0	2,976,000
RELOCATIONS	1,745,000	0	0	0	1,745,000
ROADS,RR,BRIDGES	180,000	0	0	0	180,000
CHANNELS & CANALS	3,314,000	0	1,175,000	0	2,139,000
LEVEES&FLOODWALLS	853,000	0	0	0	853,000
PUMPING PLANT	63,451,000	0	414,000	0	63,037,000
BLDGS GNDS UTILITIES	3,040,000	0	0	0	3,040,000
PERM OPER EQUIPMENT	478,000	0	0	0	478,000
ENGR & DESIGN	14,786,000	4,117,000	2,762,000	0	7,907,000
SUPV & ADMIN	8,900,000	586,000	349,000	0	7,965,000

EFFECTIVE DATE
01 JAN 86

DIVN,MISS. RIVER COMM.
DIST,VICKSBURG DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, YAZOO

PROJECT,YAZOO BASIN

4 FEB 1986

1151

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APPROPRIATION TITLE
FC, MR&T, AR, IL, KY, LA, MS, MO, TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
FED AND NON-FED					
TOTAL COST - SCHED	1,320,784,000	407,484,000	26,752,000	35,731,000	850,817,000
UNDELIVERED ORDERS	0	6,834,000	1,762,000	-8,596,000	0
TOTAL OBLIGATIONS	0	414,318,000	28,514,000	27,135,000	850,817,000
FEDERAL FUNDS					
TOTAL COST - SCHED	1,290,459,000	407,484,000	26,752,000	35,731,000	820,533,000
UNDELIVERED ORDERS	0	6,834,000	1,762,000	-8,596,000	0
TOTAL OBLIGATIONS	0	414,318,000	28,514,000	27,135,000	820,533,000
NON-FEDERAL FUNDS					
TOTAL COST - SCHED	30,284,000	0	0	0	30,284,000
UNDELIVERED ORDERS	0	0	0	0	0
TOTAL OBLIGATIONS	0	0	0	0	30,284,000

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EFFECTIVE DATE
01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, VICKSBURG DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, YAZOO

PROJECT, YAZOO BASIN

: FEB 1986

1152

APPROPRIATION TITLE
FC, MR&T, AR, IL, KY, LA, MS, MO, TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
METHOD OF FINANCING					
FED AND NON-FED					
ALLOCATIONS		416,067,000	29,900,000		
UNOB CARRYOVER PFY			1,749,000	3,135,000	
TOTAL AVAIL FOR OBL		0	31,649,000		
APPROPRIATION REQUIRED				24,000,000	850,817,000
FEDERAL FUNDS					
ALLOCATIONS		416,067,000	29,900,000 1/		
UNOB CARRYOVER PFY			1,749,000	3,135,000	
TOTAL AVAIL FOR OBL		0	31,649,000		
APPROPRIATION REQUIRED				24,000,000	820,533,000
				FUTURE FEDERAL REQUIREMENTS	
				FISCAL YEAR 1988	31,000,000
				FISCAL YEAR 1989	29,000,000
				FISCAL YEAR 1990	31,000,000
				FISCAL YEAR 1991	30,000,000
				REMAINING BALANCE	699,533,000

1/ REFLECTS $6,250,000 REDUCTION ASSIGNED AS SAVINGS AND SLIPPAGES AND $350,000 PROPOSED TRANSFER FROM THE PROJECT.

EFFECTIVE DATE 01 JAN 86 | DIVN, MISS. RIVER COMM. DIST, VICKSBURG DISTRICT | REGION, LOWER MISSISSIPPI BASIN, YAZOO | PROJECT, YAZOO BASIN

4 FEB 1986

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APPROPRIATION TITLE
FC, MR&T, AR, IL, KY, LA, MS, MO, TN

CLASSIFICATION, CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
NON-FEDERAL FUNDS					
CONTRIBUTIONS		0	0		
UNOB CARRYOVER PFY					
TOTAL AVAIL FOR OBL		0	0		
CONTRIBUTION REQUIRED				0	30,284,000

FUTURE NON-FED REQUIREMENTS

FISCAL YEAR 1988	0
FISCAL YEAR 1989	0
FISCAL YEAR 1990	0
FISCAL YEAR 1991	0
REMAINING BALANCE	30,284,000

NON-FEDERAL COSTS	
CASH CONTRIBUTIONS	22,379,000
OTHER COSTS	7,946,000
LANDS AND DAMAGES	4,828,000
RELOCATIONS	3,118,000
OTHER	0

EFFECTIVE DATE
01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, VICKSBURG DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, YAZOO

PROJECT, YAZOO BASIN

4 FEB 1986 1154

APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO and TN - Construction

PROJECT: West Tennessee Tributaries, Tennessee (Continuing)

LOCATION: The project is located along the Obion and Forked Deer Rivers and their forks in West Tennessee, in Weakley, Madison, Gibson, Obion, Dyer, Crockett, Lauderdale and Haywood Counties, Tennessee.

AUTHORIZATION: Flood Control Acts of 1948 and 1966 and the Water Resources Development Acts of 1974 and 1976.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 2.2 to 1 at 2-1/2 percent. The benefit to cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1960) was 2.9 to 1. The benefit to cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost
Estimated Federal Cost	$104,000,000	
Estimated Non-Federal Cost	3,740,000	
Cash Contribution 0		
Other Costs $3,740,000		
Total Estimated Project Cost	$107,740,000	
Allocations to 30 September 1985	$32,441,000	
Conference Allowance for FY 1986	3,100,000	
Allocation for FY 1986	3,100,000	
Allocations to Date	35,541,000	34
Allocation Requested for FY 1987	$ 5,500,000	39
Scheduled Balance to Complete After FY 1987	$62,959,000	
Unscheduled Balance to Complete After FY 1987	0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	40	Apr 2003

PHYSICAL DATA

Lands and Damages	32,000 acres
Relocations	
Roads: 13 bridges	
Railroads: 7 bridges	
Channels:	Authorized
Obion River	54 miles
Obion River Forks	65 miles
Forked Deer River	5 miles
Forked Deer River Forks	101 miles
Total	225 miles
Levees and Floodwalls:	7.6 miles

Division: Mississippi River Commission District: Memphis Region: Lower Mississippi
West Tennessee Tributaries, Tennessee

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JUSTIFICATION: The project is a flood control and drainage project and is a unit of the Comprehensive Plan for Flood Control, Mississippi River and Tributaries. The floods of record in 1935 and 1937 overflowed 455,000 acres of cleared and wooded area. This entire area will receive benefits from project construction due to accelerated flood runoff thus reducing duration of overflow periods; however, benefits will accrue upon completion of each item of construction. Project construction will also eliminate overflow during the crop season on about 239,221 acres (162,644 cleared and 76,577 wooded). The principal population centers of the drainage basin include Jackson, Dyersburg, Union City, Humboldt, Trenton, Milan, all in Tennessee, and Fulton, Kentucky. Farming, including truck farming, stock raising and dairying, is the principal occupation throughout the basin. Construction of the project will tend to stabilize the area's predominately agricultural economy. The project is credited with redevelopment benefits, benefits from flood damages prevented and benefits from a higher land use made possible by reduced flooding. Total average annual benefits and designated redevelopment areas are as follow:

Benefits	Amount (1 October 1985)
Flood Control	$4,694,000
Area Redevelopment	28,000
Advance Replacement	18,000
Betterments	3,000
Recreation	801,000
Timber	323,000
Total	$5,867,000

Redevelopment Areas (PL 89-136)

State and County	Title	Subsection
	Kentucky:	
Graves	IV	(1)
	Tennessee:	
Crockett	IV	(1)
Gibson	IV	(1)
Haywood	IV	(1)

1 FEB 1986

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FISCAL YEAR 1987: The requested amount of $5,500,000 will be applied as follows:

Initiate:	
Halls, Item 2, South Fork Forked Deer, Miles 9.0-15.2	$ 660,000
Initiate and Complete:	
Halls, Item 2B, South Fork Forked Deer, Mile 12.4, 26" Pipeline	840,000
Continue:	
Lands and Damages	1,800,000
Complete:	
Fowlkes Channel Item 1-2, South Fork Forked Deer, Mile 4.4-9.0	1,067,000
Engineering and Design	733,000
Supervision and Administration	400,000
Total	$5,500,000

Funds requested will be used to continue channel work on the Obion and Forked Deer rivers where there is deficient channel capacity and to continue acquisition of mitigation lands and planning for project construction.

NON-FEDERAL COST: Local interests are required to furnish lands, easements, rights-of-way and relocation of utilities. Non-Federal costs are broken down as follows:

Lands and Damages	$3,535,000
Relocations	205,000
Total	$3,740,000

In addition, the estimated annual cost to local interests for maintenance is $362,000 which includes $223,000 for average annual replacements. In addition to the above, local interests have expended approximately $4,000,000 to construct main and lateral ditches in the Obion Basin.

4 FEB 1986

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STATUS OF LOCAL COOPERATION: Necessary assurances were furnished by the Obion-Forked Deer Basin Authority on 2 June 1972 and were accepted 14 June 1972. Section 221 of the Flood Control Act of 1970 (PL 91-611) is not applicable to other items of work but is required by Section 3 of the Water Resources Development Act of 1974 (PL 93-251) for the mitigation lands and for the levees authorized by the Water Resources Development Act of 1976 (PL 94-587). The State of Tennessee lacks authority to enter into a Section 221 agreement for the mitigation lands. Assurances have not been furnished for the levees authorized by the Water Resources Development Act of 1976 (PL 94-587).

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal cost estimate of $104,000,000 is an increase of $2,000,000 from the last estimate ($102,000,000) submitted to Congress. This change includes increases of $517,000 for adjustments in the estimated inflation allowance through the construction period; $1,430,000 based on more detailed planning of relocations and construction; and $100,000 in Engineering and Design and $100,000 in Supervision and Administration based on recent reanalysis of requirements. These increases were partially offset by decreases of $76,000 based on actual cost of completed work and $71,000 based on contract award.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Supplemental Environmental Impact Statement was forwarded to the Environmental Protection Agency on 9 February 1983. The notice appeared in the Federal Register on 25 February 1983.

The provisions of Section 404 of the Clean Water Act for the Mengelwood Item have been met by a Section 404 Evaluation Report signed by the District Engineer on 20 October 1976. The provisions of Section 404 of the Clean Water Act will be followed prior to advertising the remaining work as detailed plans for individual work items are developed. If hearings are requested, delays in commencing the work could result. Schedule for compliance with Section 404 requirements for items to be initiated in FY 1987 is as follows:

Item	Preliminary Evaluation	Issuance of Public Notice	State Certification	Date of Signature by District Engineer on Report
Halls, TN, Item 2, Channel Enlargement	May 86	Jul 86	Oct 86	Oct 86
Halls, TN, Item 2B 26" Pipeline	May 86	Jul 86	Oct 86	Oct 86

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1959 and for construction in FY 1960.

FEB 1983 1158

OTHER INFORMATION: (CONT'D)

The District Court found the Environmental Impact Statement to be inadequate on 2 March 1973, and enjoined any further construction until an updated final Environmental Impact Statement was prepared and reviewed. Exempted from the injunction was construction underway, project planning and acquisition of proposed mitigation lands. On 5 August 1974, a Consent Order was signed that allowed construction of the Mengelwood Item and the Obion-Tiptonville Levee extension and a diversion channel. The revised Environmental Impact Statement was submitted to the Council on Environmental Quality on 21 July 1975. On 2 September 1975 the United States Attorney filed a motion for review of the updated Evironmental Impact Statement, dissolution of the injunction and dismissal of the case. The plaintiffs responded to this motion on 9 January 1976. On 2 July 1976 the Court found that an evidentiary hearing was required. A Consent Order modifying the injunction was issued on 15 June 1976 which allowed channel excavation and riprap stone protection at the old U.S. Highway 51 and Illinois Central-Gulf Railroad Bridges on the South Fork-Forked Deer River. An evidentiary hearing was scheduled to be held on 6 December 1976, but was postponed by the Court because of a crowded court calendar. Post trial briefs were filed by all parties and reply briefs were submitted on or before 9 September 1977 as required by the Court. A final revised Environmental Impact Statement was reviewed by the U.S. District Court for the Western District, Western Division of Tennessee, and on 27 January 1978 the Court held that the Environmental Impact Statement was deficient and continued the modified construction injunction. The final Supplemental Environmental Impact Statement was forwarded to Environmental Protection Agency on 9 February 1983. The notice appeared in the Federal Register on 25 February 1983.

The Governor of Tennessee established a Task Force in 1980 consisting of the Tennessee Department of Agriculture, the Tennessee Department of Conservation, the Tennessee Wildlife Resources Agency, and the Obion-Forked Deer Basin Authority. The duty of the Task Force was to review the West Tennessee Tributaries Project and recommend changes. In May 1981 the Governor provided the conceptual plan developed by the Task Force. The concepts which were requested to be added to the remaining uncompleted part of the project included:

(1) Channel work only on one side where possible.

(2) Lateral ditching and control structures to provide drainage and water level control of lands with dead or dying timber areas.

(3) Provisions for drainage at inlet and outlet of oxbows with facilities for management of water levels.

(4) Erosion control of major lateral ditches.

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OTHER INFORMATION: (CONT'D)

A General Design Memorandum supplement was prepared to incorporate these concepts into specific plans for the remaining part of the project and is known as the Flood Control/Conservation Plan. The General Design Memorandum supplement was approved by the Mississippi River Commission on 8 August 1983. The revised plan was included in the aforementioned Environmental Impact Statement Supplement. The Record of Decision was signed by the President, Mississippi River Commission on 8 August 1983.

Negotiations between the plaintiffs and the Corps resulted in resolution of the case. On 9 May 1985, the District Court lifted the injunction that had prohibited the Corps from working on portions of the project since 1970. Another suit was filed on 23 August 1985 which challenged the Environmental Impact Statement. The District Court denied the request for a temporary restraining order on 23 August 1985 and denied the request for a preliminary injunction on 30 August 1985. The Corps filed a Motion to Dismiss the case which was granted by the court on 5 December 1985.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Mississippi River Commission
District: Memphis

Project: West Tennessee Tributaries, Tennessee

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	10,700 (Jul 67)		102,000 1/		104,000 1/3/
Reason for Change		(91,300) 1/		(2,000) 3/	
a. Price Escalation		44,700		517	
b. Design Changes		7,581			
c. Additional Function Added Under General Authorization					
d. Authorized Modification		8,612			
e. Post-Contract Award and Other Estimating Adjustments		14,411		1,483 2/	
f. Schedule Changes					
g. Sundry		893			
h. Real Estate		15,103			

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes increases of $1,430 based on more detailed planning of relocations and construction; $100 in Engineering and Design and $100 in Supervision and Administration based on reanalysis of requirements; and decreases of $76 based on actual cost and $71 based on contract award.
3/ Includes $517 for adjustments in the estimated inflation allowance through the construction period.

4 FEB 1986

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APPROPRIATION TITLE: FC, MR&T, AR, IL, KY, LA, MS, MO and TN

CLASSIFICATION: Construction
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
LANDS AND DAMAGES	22,503,000	8,734,000	627,000	1,800,000	11,342,000
RELOCATIONS	10,631,000	4,157,000	471,000	840,000	5,163,000
CHANNELS & CANALS	52,690,000	10,168,000	1,433,000	1,727,000	39,362,000
LEVEES & FLOODWALLS	2,167,000	0	0	0	2,167,000
CULT RES PRESERVATION	300,000	11,000	194,000	0	95,000
ENGR AND DESIGN	9,289,000	6,548,000	657,000	733,000	1,351,000
SUPER AND ADMIN	6,420,000	2,187,000	354,000	400,000	3,479,000
FEDERAL FUNDS					
TOTAL COST - SCHED	104,000,000	31,805,000	3,736,000	5,500,000	62,959,000
UNDELIVERED ORDERS	0	606,000	-606,000	0	0
TOTAL OBLIGATIONS	0	32,411,000	3,130,000	5,500,000	62,959,000

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EFFECTIVE DATE 01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, MEMPHIS DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, EAST MEMPHIS DIST

PROJECT, WEST TENNESSEE TRIBS
TN

4 FEB 1986 1162

APPROPRIATION TITLE: FC, MR&T, AR, IL, KY, LA, MS, MO and TN
FLOOD CONTROL MR&T

CLASSIFICATION: CONSTRUCTION
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
METHOD OF FINANCING					
FEDERAL FUNDS					
ALLOCATIONS		32,441,000	3,100,000		
UNOB CARRYOVER PFY			30,000		
TOTAL AVAIL FOR OBL		0	3,130,000		
APPROPRIATION REQUIRED				5,500,000	62,959,000
				FUTURE FEDERAL REQUIREMENTS	
				FISCAL YEAR 1988	5,100,000
				FISCAL YEAR 1989	5,700,000
				FISCAL YEAR 1990	7,300,000
				FISCAL YEAR 1991	5,800,000
				REMAINING BALANCE	39,059,000
NON-FEDERAL COSTS					
CASH CONTRIBUTIONS					
OTHER COSTS					
LANDS AND DAMAGES	3,535,000	1,340,000			2,195,000
RELOCATIONS	205,000	75,000			130,000
OTHER					

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EFFECTIVE DATE 01 JAN 86

DIVN, MISS. RIVER COMM.
DIST, MEMPHIS DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, EAST MEMPHIS DIST

PROJECT, WEST TENNESSEE TRIBS

4 FEB 1986

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APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO, and TN - Dam Safety Assurance

PROJECT: Sardis Dam, Mississippi (Continuing)

LOCATION: The project is located in Mississippi approximately 50 miles south of Memphis, Tennessee, on Sardis Lake Reservoir.

AUTHORIZATION: Flood Control Acts of 1936 and 1941.

BENEFIT TO COST RATIO: Not applicable under the Major Rehabilitation and Dam Safety Assurance Program.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost
Estimated Federal Cost	$9,000,000	
Estimated Non-Federal Cost	0	
Cash Contribution	0	
Other	0	
Total Estimated Project Cost	9,000,000	
Allocations to 30 September 1985	100,000	
Conference Allowance for FY 1986	3,500,000	
Allocation for FY 1986	300,000 1/	
Allocations to Date	400,000	1
Allocation Requested for FY 1987	3,500,000	40
Scheduled Balance to Complete After FY 1987	5,100,000	
Unscheduled Balance to Complete after FY 1986	0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Dams	0	Dec 88

PHYSICAL DATA

Sardis Dam:

Dams: Addition of a berm approximately 1,000 feet long along the upstream slope of the dam; approximate height above the reservoir floor of 45 feet.

1/ Reflects $3,200,000 reduction assigned as savings and slippage.

JUSTIFICATION: Sardis Dam is located in a seismic zone which is affected by the New Madrid fault system. The New Madrid fault was responsible for three significant earthquakes occurring between January 1811 and February 1812. These earthquakes measured between 7.1 and 7.4 on the Richter scale and were felt as far away as Chicago, IL, and Washington, D. C. The Reelfoot Lake region of northwestern Tennessee was created as a result of ground subsidence triggered by these seismic events. Smaller earthquakes have continued to emanate from this area

Division: Mississippi River Commission District: Vicksburg Region: Lower Mississippi
Sardis Dam, Mississippi

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until the present. The distance to the New Madrid fault zone is approximately 70 to 175 miles north to northwest of Sardis Dam. A field investigation program has located a potentially liquefiable weak layer in a portion of the foundation of the dam under the upstream face. Dynamic studies and analysis performed to date indicate that during a major earthquake from the New Madrid region, the upstream face of the dam could possibly slide into the lake resulting in the potential failure of Sardis Dam and loss of the pool.

Failure of Sardis Dam would cause significant damage. Depending upon the water level in the reservoir, a failure of Sardis Dam would affect between 49,000 to 115,000 people, based upon the 1980 census, and between 580,000 to 1,271,000 acres would be flooded. This includes the towns of Batesville, Belzoni, Charleston, and Greenwood, MS. This could cause a maximum of $1,100 million in damages (April 1985 price level).

FISCAL YEAR 1987: The requested amount of $3,500,000 will be applied as follows:

Continue: Sardis Dam Berm	$3,200,000
Engineering and Design	40,000
Supervision and Administration	260,000
Total	$3,500,000

These funds will be used to continue construction of Sardis Dam berm. This unit when completed will stabilize a section of Sardis Dam in the event of a major earthquake in this region, thus preventing potential failure of the dam with resultant consequences.

NON-FEDERAL COSTS: None.

STATUS OF LOCAL COOPERATION: None required.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $9,000,000 is the same as the last submitted to Congress.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: An Environmental Assessment and Finding of No Significant Impact was submitted as an appendix to the Design Memorandum addressing the remedial measures design. These items were completed in April 1985. An Environmental Impact Statement will not be required.

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A Section 404(b)(1) evaluation was submitted with the Design Memorandum. Public notice for the Section 404(b)(1) evaluation was issued 22 January 1985. A Water Quality Certification was received from the State of Mississippi on 19 February 1985 for this work.

Fish and Wildlife:

A very minor amount of lands or terrestrial habitat would be impacted during the construction of remedial measures; hence, no significant effects would occur to the general wildlife habitat (including wetlands) and wildlife resources. There is no critical habitat in the project area for any species designated as endangered or threatened by the U. S. Fish and Wildlife Service, and no significant effects should occur to any species designated as threatened or endangered by the U. S. Fish and Wildlife Service. Disturbed sites would probably contribute only temporary minor amounts of dust to the atmosphere and suspended soils to the Little Tallahatchie River, adjacent water areas, and Sardis Reservoir.

OTHER INFORMATION: Initial investigations identified a potentially liquifiable layer in a portion of the foundation of the dam under the upstream face. An indepth field investigation has been completed in the locale identified as having the greatest risk of failure and remedial measures have been designed. The remainder of the dam is presently being evaluated. Field and laboratory investigations are in progress and an analysis of the results of these investigations has been initiated. Preliminary data appear to indicate that the weak soil zones are more widespread than originally believed and could potentially involve the remainder of the dam. This evaluation has not been completed and will continue as more information is made available from the field and laboratory programs.

Assuming that the entire dam does require remedial action and that remedial measures similar to those previously designed will be adequate, the construction costs would be increased by an additional $50 to $70 million. It is estimated that all remedial construction could be completed by FY 1993.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Mississippi River Commission
District: Vicksburg

Project: Sardis Da.

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Changes (4)	Current (5)
Federal Cost (Price Level)	$9,000 (Oct 1983)		$9,000		$9,000
Reason for Change					
a. Price Escalation		0		0	
b. Design Changes		0		0	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimating Adjustments		0		0	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		0	

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APPROPRIATION TITLE
FC, MR&T, AR, IL, KY, IA, MS, MO, TN

CLASSIFICATION, DAM SAFETY ASSURANCE
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
DAMS	8,250,000	0	95,000	3,500,000	4,655,000
ENGR & DESIGN	100,000	0	0	40,000	60,000
SUPV & ADMIN	650,000	0	5,000	260,000	385,000
FEDERAL FUNDS					
TOTAL COST - SCHED	9,000,000	0	100,000	3,800,000	5,100,000
UNDELIVERED ORDERS	0	0	300,000	-300,000	0
TOTAL OBLIGATIONS	0	0	400,000	3,500,000	5,100,000

EFFECTIVE DATE 01 JAN 86

DIVN,MISS. RIVER COMM.
DIST,VICKSBURG DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, YAZOO

PROJECT,SARDIS DAM, MS

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APPROPRIATION TITLE
FLOOD CONTROL, MR&T

CLASSIFICATION, DAM SAFETY ASSURANCE
RCS-DAEN-CWB-13

SUMMARY
CONSTRUCTION PROGRAM (PB-1)

	PROJECT COST ESTIMATE	TOTAL COST TO 30 SEP 1985	CURRENT FISCAL YEAR 1986	BUDGET FISCAL YEAR FY 1987	BALANCE TO COMPLETE AFTER FY 1987
METHOD OF FINANCING					
FEDERAL FUNDS					
ALLOCATIONS		100,000	300,000 1/		
UNOB CARRYOVER PFY			100,000		
TOTAL AVAIL FOR OBL		0	400,000		
APPROPRIATION REQUIRED				3,500,000	5,100,000

FUTURE FEDERAL REQUIREMENTS	
FISCAL YEAR 1988	3,500,000
FISCAL YEAR 1989	1,600,000
FISCAL YEAR 1990	0
FISCAL YEAR 1991	0
REMAINING BALANCE	0

NON-FEDERAL COSTS	
CASH CONTRIBUTIONS	0
OTHER COSTS	0
LANDS AND DAMAGES	0
RELOCATIONS	0
OTHER	0

1/ REFLECTS $3,200,000 REDUCTION ASSIGNED AS SAVINGS AND SLIPPAGES.

EFFECTIVE DATE
01 JAN 86

DIVN,MISS. RIVER COMM.
DIST,VICKSBURG DISTRICT

REGION, LOWER MISSISSIPPI
BASIN, YAZOO

PROJECT,SARDIS DAM, MS

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MISSISSIPPI RIVER COMMISSION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO, and TN, Maintenance, Fiscal Year 1987

The program request of $104,841,000 provides for the day-to-day operation and ordinary maintenance, and repairs and dredging of the major features of the comprehensive project. It also consists of the revision and publication of alluvial valley maps and navigation charts. The fund requirements are based upon the normal recurring annual expenses determined from experience records during the past years and the repair and dredging work necessary to maintain the projects in operable condition.

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
Mississippi River Levees AR, IL, KY, LA, MS, MO, & TN	8,526,000	14,672,000	7,395,000	Variation in levee setback program.
Bonnet Carre, LA	395,100	342,000	436,000	Additional maintenance of structure in FY 1985. Additional water quality activities in FY 1987.
Channel Improvement, AR, IL, KY, LA, MS, MO & TN				
Revetment and Dikes	30,475,300	29,716,000	35,138,000	Increased repairs to revetments in FY 1987.
Dredging	16,285,700	16,375,000	19,343,000	Variation in dredging requirements.
Memphis Harbor (McKellar Lake)	1,994,700	1,080,000	1,080,000	Variation in dredging requirements.
Greenville Harbor	227,100	300,000	424,000	Variation in dredging requirements.
Vicksburg Harbor	86,500	280,000	319,000	Variation in dredging requirements.
Baton Rouge Harbor (Devil's Swamp)	178,900	280,000	285,000	Variation in dredging requirements.

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MISSISSIPPI RIVER COMMISSION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO, and TN, Maintenance, Fiscal Year 1987

OBLIGATIONS

Project	Actual FY 1985	Estimated FY 1986	Estimated FY 1987	Explanation of Major Changes
	$	$	$	
Mapping, AR,IL,KY,LA,MS,MO & TN	388,200	642,000	662,000	Additional quadrangle mapping in FY 1986 and FY 1987.
St. Francis Basin, AR & MO:				
Wappapello Lake, MO	2,832,500	3,500,000	2,771,000	Repairs of maintenance compound and road in FY 1985 and FY 1986.
St. Francis River & Tributaries, AR & MO	5,633,900	4,266,000	3,719,000	Increased pumping requirements and channel maintenance in FY 1985 and FY 1986. Payment of damages in FY 1985 due to equipment malfunction and operational difficulties of the W. G. Huxtable Pumping Station.
White River Backwater, AR	577,700	704,000	677,000	Pumping plant repairs in FY 1986. Repairs to Graham Burke Pumping Station and levee slides in FY 1986 and FY 1987.
Lower Arkansas River, AR:				
North Bank	66,600	445,000	15,000	Little Bayou Meto Structure repair in FY 1985 and FY 1986.
South Bank	474,000	179,000	42,000	Structure repairs in FY 1985 and FY 1986.

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MISSISSIPPI RIVER COMMISSION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO, and, TN, Maintenance, Fiscal Year 1987

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
Tensas Basin, AR & LA:				
Boeuf and Tensas Rivers	699,600	1,219,000	1,784,000	Initiation of operation of Lake Chicot Pumping Plant in FY 1986.
Red River Backwater Area	190,400	742,000	1,327,000	Drainage structure repair in FY 1986. Initiation of operation of Tensas-Cocodrie Pumping Plant in FY 1987.
Yazoo Basin, MS:				
Sardis Lake	3,723,400	2,865,000	3,065,000	Earthquake studies and repair to public use facilities in FY 1985.
Arkabutla Lake	2,240,000	2,366,000	2,031,000	Earthquake studies in FY 1985. Snagging and clearing tributaries in FY 1986.
Enid Lake	2,065,300	2,501,000	2,300,000	Repair to public use facilities in FY 1986.
Grenada Lake	4,392,300	3,595,000	3,292,000	Repair Guns-Graysport Crossing in FY 1985 and FY 1986.
Greenwood	469,000	520,000	475,000	Replace electrical equipment in FY 1986.
Yazoo City	154,800	401,000	330,000	Replace electrical equipment and gate lift mechanism in FY 1986 and FY 1987.

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MISSISSIPPI RIVER COMMISSION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO, and, TN, Maintenance, Fiscal Year 1987

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
Main Stem	798,800	1,175,000	1,502,000	Levee repairs in FY 1986 and FY 1987.
Tributaries	908,300	700,000	1,143,000	Levee repairs in FY 1985. Yalobusha River channel cleanout in FY 1987.
Whittington Auxiliary Channel	204,400	769,000	57,000	Replace Lake George control weir in FY 1985 and FY 1986.
Big Sunflower River	77,800	218,000	94,000	Weir repairs in FY 1986.
Yazoo Backwater	3,079,800	2,077,000	287,000	Drainage structure repairs in FY 1985 and FY 1986.
Old River, LA	5,478,900	5,362,000	5,814,000	
Atchafalaya Basin, LA	7,828,100	7,617,000	7,797,000	
Lower Red River, LA	249,200	38,000	62,000	Major levee repairs in FY 1985 and additional levee maintenance in FY 1987.
Bayou Cocodrie & Tributaries, LA	97,700	113,000	115,000	Additional water quality activities in FY 1986 and FY 1987.

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MISSISSIPPI RIVER COMMISSION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Flood Control, Mississippi River and Tributaries, AR, IL, KY, LA, MS, MO, and, TN, Maintenance, Fiscal Year 1987

	OBLIGATIONS			
Project	Actual FY 1985	Estimated FY 1986	Estimated FY 1987	Explanation of Major Changes
	$	$	$	
Inspection of Completed Works, AR, IL, KY, LA, MS, MO & TN	893,200	1,051,000	1,060,000	Additional survey contract in FY 1986 and increased inspections in FY 1986 and FY 1987 to insure proper maintenance by local interests after flood event.
TOTAL MISSISSIPPI RIVER COMMISSION	101,693,200	106,110,000	104,841,000	

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RECOGNITION OF MR. WHITTEN

Mr. BEVILL. A very good presentation. At this time I am going to withhold my questions and yield to Chairman Whitten.

MISSISSIPPI RIVER DRAINAGE BASIN

Mr. WHITTEN. Thank you. I appreciate the chance to present here several things of which I am very proud. In the first place, I think it would be well to put another map of the Mississippi River Basin in the record. I think one advantage you have of serving here a long time is that you remember a lot of things, and your colleagues don't, so you can tell it like you remember it without them taking issue with you. But when the Flood Control Act of 1928 was first written, it was indicated that there would be treatment of the watersheds.

WATERSHED TREATMENT FOR FLOOD PREVENTION

When I came here, nothing had been done along that line, and I went to the Democratic Convention and convinced them we need the watershed protection for flood prevention. The Democrats lost to President Eisenhower, Mr. Anderson succeeded me as chairman, so we got about 60 pilot plans throughout the country trying to get treatment to watersheds as a flood prevention measure on the basis that if you let the water run freely down from the watershed you are not going to be able to control it when it gets to the flat land.

COOPERATION BETWEEN THE CORPS AND SOIL CONSERVATION SERVICE

We went through a period too where the Corps said, "No, you handle that," and the Soil and Conservation Service said, "No, you handle it.". One handled the hills, and the other handled the rivers, but the land in between where the people were living, one said "You take it", and the other said, "No, you take it." We wrote some legislation that directed that where one agency laid the shovel down, that is where the other agency's responsibility started. We got an accommodation for it because it stopped the argument about whose job it was.

For years we have had false pride in jurisdiction here in the Congress about who had jurisdiction over what, trying to report out the need for the Corps and the Soil Conservation Service to handle these things jointly. From Memphis, Tennessee to Yazoo City, we have the perfect example of the delta—my town is in the hills, but the delta comes up to the edge of town. So, recognizing the value of accorded effort by the Soil Conservation Service and the Corps, where you have certain authorities, they don't have and they have some you don't have, with the help of the Committee, Subcommittee and the Congress, we started this program of Demonstration Erosion Control, hoping not only will it be of some benefit, but it is a continuing program and pilot plan to show what could be done over the country.

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DEMONSTRATION EROSION CONTROL PROGRAM

You may say why is that necessary? Well, I don't have the figures before me, but we are constantly building shopping centers, highways, putting land under concrete over the whole United States, which means we have got a continuing problem. We never will get it complete because more and more timber is dying and timber is being used. We are starting to realize that.

So the program was worked out, and I want to congratulate you for the way you have cooperated, but I want to say for the record it took years to bring this about. This is a continuing project which shows the value of the two agencies cooperating together, and I hope that with time we will convince our Public Works and Agriculture, Authorizing Committees, of the value of meeting these things head on with coordinated efforts.

I realize how big this country is. Some years ago we had a request before another committee I am on for $250,000 to have a cold weather laboratory at Peoria, Illinois where we could do testing under cold conditions similar to Russia. I asked why they didn't use Eglin Field in Florida, where we have a place as big as three football fields, for that kind of thing. We took it up in the military, they said "Why don't you use the one at Quantico across the river here?" So I think that I could see a world of benefit in having you coordinate this effort with the National Agricultural Research Station at Oxford, Mississippi, and the Waterways Experiment Station that you have at Vicksburg, which serves the whole nation.

I just want to say again that this culminates in a whole lot of effort on a whole lot of people's part, and from all I hear, you are doing a great job. I want to say for the record the intent was and the law provides that this is a beginning of a demonstration pilot program that should be of benefit to the whole United States. We see California, Texas, Utah, and all these places that are even today being stricken by floods, but yet we have trouble getting people to recognize if you don't hold the water back in the hills, you can't control it when it gets to the flat lands.

STATUS REPORT-DEMONSTRATION EROSION CONTROL PROGRAM

I would like to hear a report from you, General, about what the situation is in connection with this pilot program which is just beginning and which we trust will continue for a number of years.

General SANDS. Well, as was indicated in the presentation, we worked on a number of projects, some 50 items in the six watershed areas, and we are very pleased with the progress. We have had absolutely no problems at all—

Mr. WHITTEN. Are you learning something that will be of benefit in the future years?

General SANDS. I am sure we will over time. You noticed three slides that I did show clearly identify what the benefits of the work we have already accomplished in that one particular area are going to allow in terms of erosion of that particular bankline. As I indicated earlier, the thing that is kind of interesting about the process we have gone through so far is that the solutions or the items, the activities are basically very simple ones. It has not been anything complicated, just normal engineering technology that can be ac-

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complished—I don't want to use the word "rudimentary fashion"—but a very simple fashion if the items are put together in the proper manner will go to great lengths to keep the soil back and hold the water in the upper reaches.

BENEFITS OF THE DEMONSTRATION EROSION CONTROL PROGRAM

Mr. WHITTEN. You recognize the value of your primary function, that is controlling floods—the value if the water is held back in the hills?

General SANDS. Absolutely.

Mr. WHITTEN. To do that, are you saying it benefits you and the other agency working together as we provided in this erosion control pilot program?

General SANDS. I think there have been benefits to both agencies.

Mr. WHITTEN. Mr. Chairman, I have a series of questions I would like General Sands to answer for the record. I would also like to insert in the record the map of the Mississippi River Basin referred to earlier.

Mr. BEVILL. Without objection, so ordered.

[The information follows:]

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Questions Submitted by Congressman Whitten

YAZOO BASIN

Mr. WHITTEN. $7.5 million was appropriated in FY 1986 for the Corps portion of the Demonstration Erosion Control Program. What is the status of the work, including the work being done by the Soil Conservation Service?

General SANDS. The following table provides the requested information:

FISCAL YEAR 1986 DEMONSTRATION EROSION CONTROL PROGRAM

	Estimate	Award date
Corps of Engineers:		
Batupan Bogue-Crowder Creek grade control	$250,000	Sep 86.
Batupan Bogue-Eskridge Creek grade control	500,000	Sep 86.
Batupan Bogue-Worsham Creek grade control	250,000	Sep 86.
Batupan Bogue-Littler Bogue grade control	750,000	Sep 86.
Long Creek-Caney Creek grade control	250,000	Aug 86.
Long Creek grade control	500,000	Aug 86.
Hickahala Creek grade control	250,000	Sep 86.
Batupan Bogue bank stabilization	652,000	Aug 86.
Long Creek bank stabilization	375,000	Aug 86.
Black Creek bank stabilization	625,000	Sep 86.
Otoucalofa Creek bank stabilization	611,000	Sep 86.
Relocations	64,000	N/A.
Lands	134,000	N/A.
Engineering and design	1,501,000	N/A.
Supervision and administration	788,000	N/A.
Total	$7,500,000	
Soil conservation services (contract items only):		
Batupan Bogue, pipe (2)	$400,000	Aug 86.
Batupan Bogue bank stabilization	300,000	Aug 86.
Long Creek, pipe	350,000	Sep 86.
Long Creek, bank stabilization	350,000	Oct 86.
Hickahala, pipe	300,000	Jul 86.
Hickahala, bank stabilization	200,000	Jul 86.
Hickahala, grade control	450,000	Sep 86.
Black Creek, channel work	300,000	Jan 87.
Black Creek, bank stabilization	250,000	Oct 86.
Hotophia Creek, pipe	350,000	Jun 87.
Hotophia Creek, bank stabilization	350,000	Sep 87.
Unspecified long-term land treatment	333,000	N/A.
Total	$3,933,000	

Mr. WHITTEN. A total of $24 million is requested for the Yazoo Basin in FY 1987, including $200,000 for the Ascalmore-Tippo and Opossum Bayous feature and $14.2 million for the Upper Yazoo Projects feature. What specific items under these features will receive funding in FY 1987?

General SANDS. Sir, the $200,000 requested for the Ascalmore Tippo and Opossum Bayous feature will be used for preparation of the Operation and Maintenance Manual required for the Tallahatchie River Control Structure and for sediment and channel stability studies. Funds requested for the Upper Yazoo Project will be used to initiate construction of Levee and Channel Item 3A and East Hollie Lake Drainage Structure and continue work on the

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Fort Pemberton Control Structure and continue design and land acquisition for remaining construction on the project.

YAZOO RIVER BASIN STUDY

Mr. WHITTEN. The FY 1987 Budget contains $500,000 to continue the Yazoo River Basin, Mississippi, study. What is the status of the study?

General SANDS. Studies of partial mitigation for the Yazoo Backwater project, urban flooding in Greenville, rural and agricultural flooding in the Big Sand-Teoc Creeks areas, flooding and water quality problems at Moon Lake, and the evaluation of reservoirs to provide flood protection from hill runoff into the Yazoo Delta have been completed. As a part of the basinwide analysis of multipurpose flood control and water supply alternatives, water supply studies are continuing to keep pace with the ongoing related studies being conducted by the Mississippi Department of Natural Resources, U.S. Geological Survey, and the Soil Conservation Service. A portion of the water demand studies has been completed with the water supply availability portion scheduled for completion in FY 1986. Studies recommending channel improvement and levee alternatives for the Lake Operations and Outlet Channels Interim Study were completed in December 1985; the final study is scheduled to be completed in October 1986. Preliminary evaluations for the Yazoo River Lower Tributaries and McKinney Bayou areas are expected to be completed this year. Studies of flooding problems in Yazoo City have been completed. Studies of interior flooding problems within the levee at Greenwood are ongoing. Remaining authorized unconstructed flood control works will be evaluated to determine if detailed studies are required. Also bank caving problems in the Delta will be identified and preliminary solutions developed. The overall study report is scheduled for completion in January 1989.

Mr. WHITTEN. How will the requested funds be utilized?

General SANDS. The $500,000 requested for FY 1987 will be used to complete the Yazoo Headwater Area and Lake Operations and Outlet Channels Interim Studies, evaluate remaining authorized unconstructed flood control works, investigate bank caving problems, continue analysis of multipurpose flood control and water supply alternatives, and initiate preparation of the overall summary report.

NONCONNAH CREEK

Mr. WHITTEN. $800,000 is budgeted to complete the continuation of planning and engineering phase of the Nonconnah Creek, Mississippi and Tennessee, study. Describe the work planned in FY 1987.

General SANDS. Sir, the work planned for FY 1987 includes the completion of all design studies up to, but not including, prepara-

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tion of the plans and specifications for the first major item of construction. The preparation of plans and specifications will be accomplished after the project is authorized for construction.

Mr. WHITTEN. When is this phase of the study scheduled for completion?

General SANDS. Sir, the studies are scheduled for completion in September 1987.

PEARL RIVER BASIN

Mr. WHITTEN. I note that $590,000 is budgeted to continue the Pearl River Basin, Mississippi and Louisiana, study in FY 1987. In addition, $1 million is requested to initiate continuation of planning and engineering phase of the Pearl River Shoccoe Dam study in FY 1987. What is the status of the overall Pearl River Basin study?

General SANDS. A final Feasibility Report for the Jackson, Mississippi, area flood control study was completed in October 1984. The Division Engineer's Notice of Report was issued in November 1984, recommending the Shoccoe Dam project. The Jackson Report was approved by the Board of Engineers for Rivers and Harbors in June 1985. The Chief of Engineers' proposed report and the report to the Board which recommends construction of the Shoccoe Dry Dam is currently being coordinated with the State of Mississippi and various Federal agencies before transmitting the report to the Secretary of the Army. A final Feasibility Report on Slidell, Louisiana, and Pearlington, Mississippi, was completed in August 1985. The Division Engineer's Notice of Report was issued in September 1985, recommending the construction of a 15-mile levee system in the Slidell area. No plans were feasible for Pearlington, Mississippi. The report is currently being reviewed by the Board and is scheduled to be presented at the March 1986 Board meeting. Ongoing flood control studies for Carthage, Mississippi, and preliminary studies on Bogue Chitto subbasin are scheduled for completion in FY 1987. Preliminary evaluation for the Carthage area indicate that flood control measures are not economically feasible. Preliminary navigation studies for the lower Pearl River basin are scheduled for completion in FY 1987. Ongoing flood control studies for Monticello and Columbia, Mississippi, and Bogalusa, Louisiana, are continuing. Detailed engineering and design studies for the Slidell levee project and Shoccoe Dam project are underway.

Mr. WHITTEN. How will the funds requested for the Shoccoe Dam portion of the study be utilized?

General SANDS. The $1,000,000 requested will be used to continue planning and engineering studies. Funds will be used for work on the General Design Memorandum and for initiation of the hydraulic model study and the detailed design memorandum which includes detailed planning, surveys, hydraulic studies, foundation studies, design studies, and project management activities and preparation of reports.

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YAZOO BACKWATER PUMPING PLANT

Mr. WHITTEN. The Committee has twice directed the Corps to initiate the Yazoo Backwater Pumping Plant. This pumping plant was authorized many years ago as part of the Yazoo Backwater Project. There are several of these backwater areas in the Lower Valley. Their purpose is to store water from the Nation and to prevent downstream levees along the main stem from being overtopped during a major flood. Because of the stigma on the land (devoted to flood storage) and to not have to raise levees higher, Congress approved pumping plants to be built by the Federal Government and operated by the Federal Government. Three backwater areas with pumps have been built by the Government and one remains to be built. Would you please inform the Committee of your plans to complete this vital flood water storage project?

General SANDS. The pumping plant is being downsized from 17,500 cubic feet per second to 10,000 cubic feet per second in order to reduce the cost of the project. We are proceeding with the advertisement for a contract to construct the inflow and outflow channels and with the engineering and design. Further work on the project will depend upon local interest agreeing to cost share on the project in accordance with cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

PROPOSED COST SHARING AND FINANCING CONCEPTS

Mr. WHITTEN. I note that many of your authorized Mississippi River and Tributaries projects show a decrease in Federal cost and a corresponding increase in non-Federal cost. Would you explain what caused this change?

General SANDS. The budget documents for the Mississippi River and Tributaries project were prepared and cost estimates were adjusted to reflect cost sharing consistent with cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership in anticipation of enactment of legislation to support this concept. As Mr. Dawson testified, in the absence of new legislation, we will follow the cost sharing provisions as contained in the FY 1985 Supplemental Appropriations Act.

Mr. WHITTEN. Have the local sponsors of the projects indicated to you that they are able, can, and intend to cost share at the level indicated?

General SANDS. Of the items presented in the FY 1987 budget request to be cost shared, only the feasibility studies for Eastern Arkansas Region, Arkansas; Reelfoot Lake, Tennessee; and Tiptonville, Tennessee, would require a local contribution. The local sponsor of the Eastern Arkansas feasibility study has executed a contract to cost share in the feasibility phase studies. Reconnaissance phase studies for Reelfoot Lake and Tiptonville, Tennessee, have just been initiated at 100 percent Federal cost. If these reconnais-

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sance phase studies culminate in recommendations for feasibility phase studies, local sponsors will be required to execute cost sharing contracts prior to initiation of the feasibility phase studies in FY 1987.

Cost sharing on the Continuation of Planning and Engineering studies and the Advanced Engineering and Design projects included in the FY 1987 request would be cost shared based on the construction cost sharing formula agreed to between the Administration and the Senate Majority Leadership, but contributions would not be required prior to initiation of construction. Therefore, cost sharing for these studies under the new formula has not yet been discussed with local sponsors.

Construction is not scheduled in FY 1987 on any of the Separable Elements on which new cost sharing is presented; therefore, there would not be a requirement for a contribution on these items in FY 1987 either. As a result, new cost sharing on these items has not been discussed with the local sponsor.

Mr. WHITTEN. Over the past few years the Congress has directed and provided funds to start certain items intending for those items to be pursued and completed. Many of these items remain unstarted (i.e., Red River Project; Yazoo Backwater Pumping Plant; recreation items, etc.). Would you explain your reluctance to carry out the direction of Congress?

General SANDS. The following table outlines our action in response to Congressional directives since 1983:

ACTION TAKEN IN RESPONSE TO CONGRESSIONAL DIRECTIVES

1983 DIRECTIVES

YAZOO BASIN, MISSISSIPPI

Committee direction: $250,000 provided for bank stabilization.
Action: Funds were utilized to complete Greenwood, Front Street, Site 1.

RED RIVER WATERWAY, MISSISSIPPI RIVER TO SHREVEPORT, LOUISIANA

Committee direction: Committee included $40 million for continuing construction of Locks and Dams 1 and 2, channel realignment and stabilization and other associated work.
Action: Construction in Pools 1 and 2 has continued.

MERAMEC RIVER BASIN (FLOOD CONTROL), MISSOURI

Committee direction: Directed to conduct a flood control study to evaluate recent flooding problems.
Action: Study was initiated and has led to a Flood Forecasting—Flood Warning System as an engineering demonstration measure to help evaluate flood problems and solutions.

ALOHA RIGOLETTE, LOUISIANA

Committee direction: The Committee recognized the flooding problem encountered by the residents of the Aloha Rigolette Area and provided $500,000 for channel clearing of Bayou Rigolette pending completion of the then ongoing survey report.

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These funds were authorized for interim relief and did not relieve the local interest of their maintenance responsibility.

Action: Maintenance of the Aloha Rigolette is the responsibility of the local sponsor; however, for many years maintenance was not performed in the upper portion of the basin because it was considered that this would cause more flooding in the lower basin area. The original project was designed such that a natural sump area of 12,000 acres would be flooded more often than once every five years. Since completion of the project, residents have cleared and farmed more than 6,000 acres of land within the natural sump area. Until a plan was developed providing an adequate outlet, clearing and snagging work could not be accomplished without causing increased damages downstream.

SOUTHWEST MISSISSIPPI TRIBUTARIES BASIN, MISSISSIPPI

Committee direction: Initiate a feasibility report on the water resource needs in the vicinity of the Homochitto and Buffalo Rivers, Saint Catherine and Coles Creeks, Bayou Pierre, and other major tributaries draining into the Mississippi River between Bayou Pierre and the Buffalo River, Mississippi, to recommend remedial measures for flood control, bank stabilization, sedimentation, and related purposes.

Action: Study was initiated as directed but did not result in an economically feasible recommendation.

1984 DIRECTIVES

MAUVAISE TERRE LEVEE, NAPLES, ILLINOIS

Committee direction: To initiate and complete a reconnaissance report.

Action: Submitted a report in May 1984.

ST. FRANCIS BASIN, ARKANSAS AND MISSOURI W.S. HUXTABLE PUMPING PLANT DAMAGE CLAIMS

Committee direction: In providing not to exceed $2,000,000, the Committee directed the Corps of Engineers to work closely with local interests and the Department of Agriculture to determine eligibility to settle claims for damages incurred.

Action: Recieved 100 claims. All claims settled and paid as of 14 February 1986. Total amount of payments was $1,543,599.33.

EASTERN ARKANSAS REGION COMPREHENSIVE STUDY, ARKANSAS

Committee direction: Initiate feasibility phase of the Comprehensive Study.

Action: Study was initiated.

YAZOO BASIN, MISSISSIPPI

Committee direction: $250,000 provided for bank stabilization.

Action: Funds were utilized to initiate and complete Greenwood Front Street, Site 2 and initiate Greenwood-Claiborne Avenue and North Fork Tillatobia Creek, Mudline to Pinehill.

YAZOO BASIN, YAZOO BACKWATER PUMPING PLANT, MISSISSIPPI

Committee direction: Expedite completion of planning and engineering.

Action: Advanced planning and design with emphasis on the channel work which is the first item of construction.

YAZOO BASIN ROCKY BAYOU, MISSISSIPPI

Committee direction: Proceed with construction of authorized project.

Action: Design continued for Items 1A and 1B, with construction following.

BAYOU BODCAU, LOUISIANA

Committee direction: Reimburse local and State interests those sums of monies expended subsequent to 1 July 1969 not to exceed $3,500,000 for Flat River channel improvement.

Action: No action. Reimbursement was not made pending a specific appropriation of funds for this purpose by the Congress.

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OUACHITA AND BLACK RIVERS, ARKANSAS AND LOUISIANA

Committee direction: $3,500,000 to be used for construction of recreation facilities within the Felsenthal National Wildlife Refuge; the Corps was directed to proceed with construction of recreation facilities for the prior commitments made to local interests with the funds included in the bill.

Action: Eight recreation facilities were designed at Pine Island; Pereogeethe Lake; Jones Lake; Shallow Lake; Grand Marais; Crossett Harbor boat-lauching ramp, access road, and parking; Felsenthal Lock and Dam boat-launching ramp; and Crossett Harbor boat-launching ramp. Construction has been completed on seven facilities with the FY 1984 appropriation of $3,500,000.

PEARL RIVER, MISSISSIPPI

Committee direction: The Committee included $16,000,000 to implement flood control measures and directed the Corps to move as expeditiously as possible to accomplish the work.

Action: Study efforts were accelerated, but a lack of specific project authorization prevented the Corps from proceeding to construction.

NEW ORLEANS DISTRICT OFFICE BUILDING, LOUISIANA

Committee direction: Includes provisions in the bill to permit the Corps of Engineers to enter into a purchase contract agreement for the Corps' District Office in New Orleans, Louisiana.

Action: An agreement was entered into. The new facility was occupied in the fall of 1985.

1985 DIRECTIVES

MAUVAISE TERRE LEVEE, NAPLES, ILLINOIS

Committee direction: $600,000 to undertake construction of necessary improvements for protection to a 100-year flood event.

Action: Initiated engineering and design effort. Construction is scheduled for the fourth quarter of FY 1986.

MERAMEC RIVER BASIN (FLOOD CONTROL), MISSOURI

Committee direction: $470,000 for a flood forecasting-flood warning system demonstration project.

Action: Initiation of construction of a flood forecasting-flood warning system is planned in FY 1986.

YAZOO BASIN, MISSISSIPPI

Committee direction: $250,000 provided for bank stabilization.

Action: Funds were utilized to complete North Fork Tillatoba Creek, Mudline to Pinehill and Greenwood, Claiborne Avenue and initiate Point Leflore.

TENSAS RIVER NATIONAL WILDLIFE REFUGE, LOUISIANA

Committee direction: Acquire remaining lands.

Action: Land acquistion completed.

YAZOO BASIN, YAZOO BACKWATER PUMPING PLANT, MISSISSIPPI

Committee direction: Initiate site clearing and inlet and outlet construction and accelerate testing and early purchase of pumps and engines.

Action: Design of the initial construction item, the outflow channel has been completed and advertised for construction. Establishment of a construction schedule for remaining work delayed pending outcome of the review of the General Design Memorandum and a decision to initiate construction.

YAZOO BASIN, DEMONSTRATION EROSION CONTROL, MISSISSIPPI

Committee direction: Continuation of erosion control. Directed to present a completed plan and solution to Committee in time for FY 1986 budget.

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Action: Eleven contracts for bank stabilization and grade control structures were awarded in FY 1985. Planning and design continued and a plan of action for FY 1986 work was submitted in July 1985.

ENID LAKE, MISSISSIPPI

Committee direction: Improve road conditions in the vicinity of the Point Pleasant community at Enid Lake, Mississippi.

Action: Since the Point Pleasant Road is not on Corps of Engineers property, it has been determined that the Corps of Engineers does not have the authority to improve the road.

RED RIVER WATERWAY, MISSISSIPPI RIVER TO SHREVEPORT, LOUISIANA

Committee direction: Additional funds for continuation of work in Pool 1; $200,000 for initiation of work in Pool 3; within available funds stabilize banks adjacent to railroad right-of-way at Carroll Cutoff, Pool 4; $500,000 for construction of Lock and Dam 3; additional funds to proceed with construction of Lock and Dam 3 and expedite planning and design on remainder of overall project. Proceed with bank stabilization and channel realignment.

Action: Five realignments and one revetment in Pool 1 under construction; lump sum contract awarded for initial phase of construction of Lock and Dam 3; Carroll Cutoff bank stabilizaiton is not authorized under existing laws. Planning and design are being continued to provide for sequential construction and 10 realignments and 2 revetments in Pools 1 and 2 are under construction.

NATCHEZ PORT AND LEVEE STUDY, MISSISSIPPI

Committee direction: Reevaluate land value estimates to insure project values are comparable to actual values of industrial lands at other ports along the Mississippi River.

Action: Study completed.

OUACHITA AND BLACK RIVERS, ARKANSAS AND LOUISIANA

Committee direction: $2.5 million will be used to continue construction of access sites and recreational areas at Felsenthal National Wildlife Refuge.

Action: Design continuing. Funds will be made available for construction upon approval of design summaries.

ALOHA RIGOLETTE AREA, LOUISIANA

Committee direction: To initiate Continuation of Panning and Engineering studies.

Action: The study completion was delayed so that a coincidental frequency analysis of the Red River and Bayou Rigolette could be performed. It was considered that such an analysis was needed because it could have a significant effect on project formulation. The coincidental frequency analysis required that hydraulic design, economic, and environmental studies be performed for the six alternative plans included in the final plan formulation screening. The final feasibility report and Environmental Impact Statement were submitted in November 1985.

1986 DIRECTIVES:

CLARENCE CANNON DAM AND MARK TWAIN LAKE, MISSOURI

Committee direction: $1,000,000 to continue construction of recreation facilities at full Federal expense.

Action: Spalding Access Area contract will be awarded this summer. The first phase of the Hunter-Fisherman areas will be constructed this fall with the remainder being constructed in the early spring of 1987.

MERAMEC RIVER BASIN WATER SUPPLY, MISSOURI

Committee direction: $160,000 to initiate full scale reconnaissance and feasibility reports.

Action: A traditional full scale reconnaissance study is being intitiated.

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HATCHIE RIVER, MISSISSIPPI

Committee direction: Directed Corps to remove blockage.
Action: The directed work was accomplished.

YAZOO BASIN, MAIN STEM, MISSISSIPPI

Committee direction: Complete bank stabilization along Greenwood Bendways.
Action: Planning and design will be complete on the first item of work in July 1986 and remaining two items in August 1986. All construction will be completed in FY 1987.

YAZOO BASIN, MAIN STEM, MISSISSIPPI

Committee direction: $250,000 provided for bank stabilization.
Action: Funds will be utilized to initiate and complete bank protection at a bridge site on Lee Creek north of Oxford and at a bridge site on Tillatobia Creek west of Charleston, Mississippi.

YAZOO BASIN, DEMONSTRATION EROSION CONTROL, MISSISSIPPI

Committee direction: Continue joint effort between Corps of Engineers and Soil Conservation Service.
Action: Funds will be used for design and initiation of construction of 9 control structures and 4 bank stabilization items.

TENSAS BASIN, BELOW RED RIVER AREA, LOUISIANA

Committee direction: Complete General Design Memorandum.
Action: General Design Memorandum completion delayed to September 1988 due to need to develop economic data for optimization of pump station design.

BUSHLEY BAYOU AREA, LOUISIANA

Committee direction: Continue planning and engineering.
Action: Action initiated to contract Architect-Engineer services with General Design Memorandum scheduled to be completed in December 1988.

YAZOO BASIN, YAZOO BACKWATER PUMPING PLANT, MISSISSIPPI

Committee direction: Directed to initiate the channel work and pump and motor procurement.
Action: The pumping plant is being downsized from 17,500 cubic feet per second to 10,000 cubic feet per second in order to reduce the cost of the project. Work toward award of a contract to construct the outflow channel is proceeding. Further work on the project will depend upon local interest agreeing to cost share on the project in accordance with proposed cost sharing legislation which is still under consideration by the Senate.

RED RIVER WATERWAY, MISSISSIPPI RIVER TO SHREVEPORT, LOUISIANA

Committee direction: $5,700,000 added to ensure significant construction and to initiate continuing contracts in FY 1986 for continuation of Lock and Dam 3, realignment and bank stabilization measures at Pools 3, 4 and 5, and recreation facilities at Pools 1 and 2.
Action: Contracts for bank stabilization, initial excavation and cofferdam at Lock and Dam 3 is scheduled for award in March and May 1986, respectively. Initial construction contract for Lock and Dam 3 was awarded September 1985. Construction of Lock and Dam 1 is complete. Construction of Lock and Dam 2 is about 75 percent complete, 5 realignments and 5 revetments in pool 1 and 5 realignments and revetment in Pool 2 are presently under construction. One receation site in Pool 1 and one in Pool 2 are scheduled for award in FY 1986. Realignment and bank stabilization work in Pools 3, 4, and 5 are deferred pending a decision to continue work.

OUACHITA AND BLACK RIVERS, ARKANSAS AND LOUISIANA

Committee direction: Directs construction of recreation facilities access and attendant ultilities and services at certain projects at full Federal expense in keeping with provisions of the original authorizations and conference Report 98-866 accompanying Public Law 98-360.

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Action: Design is proceeding on the following items: Nursery Pond, Felsenthal Lock and Dam Access Point, U.S. Fish and Wildlife Service-Eagle Lake, Calion Lock and Dam, Crossett Harbor Phase I, Grand Marais Phase I, and Calion Lock and Dam No. 8. Construction will proceed upon completion of design.

Mr. BEVILL. The Chairman mentioned that he didn't believe there was anybody here that has been around long enough to question him. The only one I can think of is Chairman Claude Pepper, and he wouldn't question him.

Mr. WHITTEN. We work together. Thank you, Mr. Chairman.

RECOGNITION OF MR. MYERS

Mr. BEVILL. Mr. Myers.

Mr. MYERS. I yield my time to the lady from Louisiana.

RECOGNITION OF MRS. BOGGS

Mr. BEVILL. Mrs. Boggs.

Mrs. BOGGS. Thank you very much. Thank you, Mr. Myers. Thank you, Mr. Chairman.

It is very gratifying to have all of you here, and I am very grateful for the work you are doing in your area.

Mr. Chairman, I have questions here from our colleague from Louisiana, Mr. Livingston, who shares the area of representation with me. He is a member of the Appropriations Committee, of course, and he has some questions for the record that I would like to insert at this time.

Mr. BEVILL. Without objection, those questions will be made a part of the record, and you can answer them in the record.

[The information follows:]

Questions Submitted by Congressman Livingston

PEARL RIVER BASIN

Question. Explain in detail the O&M budget request for $116,000 and the $590,000 surveys request for the Pearl River Basin, Mississippi and Louisiana, project.

Answer. The $116,000 budget request for Operation and Maintenance is for caretaker duties at the three lock and dam sites. Caretaker duties include patroling the four parking areas, the three locks, and the two portage system areas for security; cleaning up visitor areas; and routine maintenance.

The budget request of $590,000 for the Pearl River Basin, Mississippi and Louisiana, survey will be used to complete flood control studies for Carthage, Mississippi, and preliminary studies for the Bogue Chitto subbasin and to continue flood control studies for Monticello and Columbia, Mississippi, and Bogalusa, Louisiana, and to complete navigation studies on the lower Pearl River.

Question. Please provide the status of the Pearl River Navigation Study including the scheduled completion date of the feasibility study for the enlargement of the navigation project on the West Pearl River to Bogalusa, Louisiana.

Answer. The Pearl River navigation study is scheduled for completion in FY 1987. To date, study efforts have concentrated on the feasibility of navigation on the West Pearl River to Bogalusa, Louisiana, and the feasibility of extension of navigation on the East Pearl River to the vicinity of Picayune, Mississippi. Currently there are divergent views between the States of Louisiana and Mississippi concerning environmental impacts in the lower Pearl basin that would result from reopening the existing West Pearl River navigation project. Studies to address enlargement of the West Pearl River navigation project have not been initiated pending outcome of investigations to utilize the existing project.

Question. What are the preliminary findings of the EIS to determine impacts of navigation on the West Pearl River below the navigation canal?

Answer. Preliminary findings of an environmental assessment indicate that the work will not have a significant impact on the environment; however, Mississippi

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residents have voiced strong concerns relative to potential adverse impacts on low flow conditions on the East Pearl River, and the State of Mississippi has objected to a permit for construction of commercial docking facilities near Bogalusa, Louisiana.

Question. Has a detailed benefit analysis and benefit-cost ratio for reopening the West Pearl River to commercial navigation been developed? What are the preliminary findings?

Answer. A preliminary economic analysis has been completed, and the findings are that the project has a very positive benefit-cost ratio.

Question. Are private permits for dredging the West Pearl River still pending before state agencies or the Corps? If so, please provide details on the status and purpose of these permits.

Answer. No private permits are pending. Past private permit applications were withdrawn because the applicant could not obtain necessary State approval.

Question. What steps would have to be taken on the State and Federal levels before such a permit would be approved?

Answer. State legislation that classifies the West Pearl as a scenic stream prohibits dredging of the West Pearl except as required by the Corps of Engineers to maintain the authorized navigation project. Unless the legislation is revised or rescinded, it is in effect a ban against any private individual or firm dredging the river. Federal involvement is strictly through the permit process, and a permit would be issued only on the basis of a case-by-case decision that the proposed work is in the public interest.

Question. Explain in detail the $750,000 construction budget request for the West Pearl, Slidell, Louisiana, flood control project.

Answer. The $750,000 request will be used to develop the General Design Memorandum which involves surveys, foundation exploration and hydrology and hydraulic, design, environmental, and cultural resource studies.

Question. What is the Fiscal Year 1987 funding capability for this project?

Answer. Design of the project is progressing as rapidly as possible, and the FY 1987 capability for this project is the same as the budget request of $750,000.

Question. What impact does the defeat of the January 18, $3 million bond issue for flood control and drainage in the Slidell, Louisiana, area have on this critical flood control project?

Answer. The defeated bond issue was voted on in Wards 8 and 9 which includes areas that will not benefit directly from the project. Ward 8 which will directly benefit from the project voted in favor of the bond issue by more than 70 percent while Ward 9 voted against the bond issue. Another bond issue is to be held in April 1986 in Ward 8 and is expected to pass.

MISSISSIPPI RIVER LEVEES—WEST BANK JEFFERSON PARISH

Question. Are the contract award schedules for the West Bank Jefferson Parish main line Mississippi River levees still progressing on the same schedule as the Division testified last year? If not, why?

Answer. With the exception of the Gretna reach, we plan to award contracts according to the schedules presented last year. Due to the complexity of the work at Gretna, we now plan to accomplish this work in two phases. The first phase will be accomplished on the original schedule and will be awarded in July 1988. The second phase is being rescheduled for June 1989.

Question. Does the FY 1987 budget request include funding for the Gretna Levees? If so, explain. If not, why?

Answer. The budget request includes $155,000 for real estate acquisition and utility relocations required for the first phase of the work.

Question. What is the status of negotiations between the Corps and Mayor Boudreaux of Westwego regarding the proposed Mississippi River levee setback at Westwego and its impact on the "Old Locks" near the river?

Answer. Mayor Boudreaux has been advised that alternatives to the levee setback are being evaluated to determine whether some means for eliminating or ameliorating impact to the lock structure is practicable. Results of the evaluation are expected in April 1986.

WEST BANK JEFFERSON PARISH HURRICANE PROTECTION

Question. After nearly 20 years of stalemate, devastation from Hurricane Juan last fall finally resulted in agreements by local, state, and Federal officials for hurricane protection on the west bank of Jefferson Parish. Briefly describe the damage caused by Hurricane Juan on the levee system and residents of the west bank of Jefferson Parish.

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Answer. The levee protecting Lincolnshire and Westminster Subdivisions was overtopped as a result of tidal action caused by Hurricane Juan. Approximately 1,200 homes were severely flooded. In addition, segments of other levees were breached, but the quick response and action by local officials and volunteers in sandbagging and reinforcing inadequate levees averted more extensive damage. It is estimated that approximately $30 million in damages occurred in the west bank area of Jefferson Parish as a result of Hurricane Juan.

Question. On January 30, plans for a comprehensive hurricane levee system were announced by local and state officials. Summarize the scope and schedule of these plans as well as the amount of Federal participation this plan envisions.

Answer. No specific plans were revealed by the local and state officials. The thrust of the announcement was to publicly acknowledge the spirit of cooperation that now exists at all levels of government and to announce that the state was making $3 million available to repair damage to the inadequate local levees, construct temporary protection, and begin efforts that can be incorporated into a Federal project. The fact that Federal funds were made available to complete a feasibility study and that the study was the top study priority of the New Orleans District was also acknowledged. The amount of Federal participation will be determined by Congress upon authorization of a Federal project after completion of the feasibility report. Local interests are very much interested in a Federal project and have indicated their willingness to share in the cost of the project.

Question. What are the latest Corps estimates for Federal funding necessary to construct the hurricane protection levee system for the West Bank of Jefferson Parish?

Answer. At present we are evaluating alternatives and preliminary estimates are not yet available. The Corps will have an accurate estimate when the feasibility study is completed in January 1987.

Question. On January 15, Congress approved the reprogramming of $250,000 to complete the long dormant feasibility study on the West Bank Jefferson Parish hurricane protection levee system. Is this funding sufficient to address the scope of the recent levee system announced by local and state officials?

Answer. The funds provided by the reprogramming action are sufficient. Our feasibility study will address hurricane protection and related flooding in the area between Westwego, Louisiana, and the Harvey Canal.

Question. Can the Corps meet its commitment to complete the feasibility study by January 1987?

Answer. The New Orleans District is scheduled to submit a final Feasibility Report and Environmental Impact Statement to the Lower Mississippi Valley Division in January 1987. The study is on schedule.

Question. Why weren't funds requested in FY 1987 for the West Bank Jefferson Parish hurricane protection project? What is the Corps' next requirement for this project after the feasibility study is completed?

Answer. Since the feasibility study has been fully funded, no additional funds are required. Upon completion of the feasibility study, Continuation of Planning and Engineering studies will be required.

Question. What is the FY 1987 funding capability for this project?

Answer. Pending approval of the feasibility report, no additional funds can be utilized in FY 1987.

17TH STREET CANAL, ORLEANS PARISH

Question. What is the current status of dredging on the 17th Street Canal in Orleans Parish project?

Answer. The maintenance of this canal is a non-Federal responsibility. The New Orleans District has issued a permit for dredging the entire canal. The New Orleans Sewerage and Water Board has dredged the southern end of the canal; however, the remaining portion has not been completed.

FORT LIVINGSTON, GRAND TERRE ISLAND

Question. I understand from concerned citizens in Lousiana that the Corps had extensive plans for erosion protection for Fort Livingston on Grand Terre Island. What is the status of these plans?

Answer. The Detailed Project Report, which recommends construction of a protective dike around three sides of the Fort, has been completed and is now under review. However, funding requests for recreation-oriented projects are not likely to be favorably considered during this time of large Federal budget deficits. The Ad-

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ministration's policy is that projects having primarily recreation outputs should be the sole responsibility of the non-Federal public and private sectors.

Question. Why hasn't the Corps requested funds to begin this project?

Answer. A request for funds would be premature until after the report has been thoroughly reviewed and approved. After the report is approved, a request for funds will be considered consistent with the Administration's assessments of national priorities for Federal investments and the objectives of avoiding large budget deficits and the serious adverse effect that Government borrowing is having on the national economy.

Question. What are the current Federal funding estimates required to complete this erosion protection project?

Answer. The total estimated construction cost if $641,000 based on the Detailed Project Report.

Mrs. BOGGS. Of course, he is especially interested in the Pearl River Basin and in the Westwego and Gretna levees and the proposal for the West Bank, Jefferson Parish protection levee.

I also have questions from Congressman John Breaux, who is our colleague and who serves on the Legislative Committee, the Authorizing Committee on Public Works, and among many of the projects that he mentions, he is especially interested in a provision which he inserted into H.R. 3670, which authorizes the Corps to develop and implement projects to create, protect, restore and enhance wetlands in conjunction with navigation and flood control projects in the Lower Mississippi Valley.

Mr. BEVILL. Without objection, it will be made a part of the record.

[The information follows:]

Questions Submitted by Congressman Breaux

EASTERN RAPIDES AND SOUTH-CENTRAL AVOYELLES PARISHES

Question. When will the Corps of Engineers hold its public hearing on the effect of the proposed Eastern Rapides/ South Central Avoyelles drainage project on Lake Henderson? What is the status of the project at this time?

Answer. The meetings have been delayed several months to allow time for the evaluation of a plan that would reduce the impacts of the project on the Henderson Lake area. They are now scheduled to be held in June 1986. A final Reevaluation Report is scheduled for submission to the Mississippi River Commission in September 1986.

UPPER BAYOU TECHE STUDY

Question. Has the New Orleans District Office of the Corps of Engineers issued its determination and recommendation with regard to the current reconnaissance phase study being conducted on Upper Bayou Teche? If not, when will the first phase study be completed and a final determination made about proceeding to the second, or feasibility stage of the study? Should the study proceed to the feasibility stage, what are the Corps' plans for crediting the contributions of the Teche-Vermilion Freshwater District, that is, to provide funds to perform the reconnaissance phase study, to conduct the feasibility phase of the study.

Answer. The reconnaissance phase of the study will be completed in June 1986. The determination to proceed to the feasibility phase will be made at that time. Assuming the reconnaissance phase of the study is favorable, the Corps will credit the local sponsor for the $110,000 they provided for the reconnaissance phase during the feasibility phase of the study. A credit of $30,000 is being allowed during FY 1986.

MERMENTAU, VERMILION AND CALCASIEU RIVERS AND BAYOU TECHE

Question. Please provide the status of the Calcasieu River Ship Channel study, in particular the recommendations which may have been issued about deepening the river channel.

Answer. The Lake Charles Ship Channel draft Feasibility Report was completed in January 1986; the final report is scheduled for completion in August 1986. The

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draft report recommends realignment of a single bendway at river mile 26.7. All plans which involved deepened of the existing ship channel were not economically justified.

Question. Please provide the status of the Calcasieu Parish flood control study.

Answer. The Lake Charles flood control study investigated alternative measures to provide flood control on Bayou Contraband and for the Kayouche Coulee watershed. On 31 July 1984, a report was prepared presenting the findings to date. There were no justified plans of improvement for the Kayouche Coulee watershed. A plan for improvements to the Bayou Contraband channel may be feasible, but since it is not possible to determine the future without project condition until the Louisiana Department of Transportation and Development finalizes its plans, the study was classified as inactive on 31 August 1984.

BALANCED BUDGET AND EMERGENCY DEFICIT CONTROL ACT OF 1985

Question. The New Orleans District is conducting a number of large area studies at this time. Please provide a report on the effect of the "Balanced Budget and Emergency Deficit Control Act of 1985" on the following studies: Mermentau, Vermilion, Calcasieu Rivers and Bayou Teche; Louisiana Coastal Area; Gulf-Intracoastal Waterway; Louisiana & Texas; and Grand and White Lakes Management. Please indicate any reductions in Fiscal Year 1986 funding, the Fiscal Year 1987 budget request, whether FY '87 is an increase or decrease over Fiscal Year 1986 funding levels and if the projects' scope, work and completion dates have changed.

Answer. The "Balanced Budget and Emergency Deficit Control Act of 1985" resulted in a reduction of 4.3 percent in the amount of funds allocated in FY 1986 for each of the studies. Assessments of impacts of the reductions on the study schedules indicates that there is no need to make adjustments in the scheduled completion dates. The actual amount of reduction on each study and a comparison of FY 1986 and FY 1987 funding follows:

COMPARISON OF FY 1986 AND FY 1987 FUNDING

Study	FY 1986		FY 1987 request	Net amount FY 1986 to FY 1987
	Allocation	Reduction		
Mermentau, Vermilion, Calcasieu and Bayou Teche:				
Grand and White Lakes Water Management	$100,000	$4,000	$460,000	+$364,000
Lake Charles Ship Channel	60,000	3,000	[1] 0	−57,000
Louisiana Coastal Area:				
Hurricane Protection	0	0	500,000	+500,000
Land Loss and Marsh Creation	150,000	6,000	220,000	+76,000
Water Supply	262,000	11,000	430,000	+179,000
Shore and Barrier Island Erosion	200,000	9,000	240,000	+49,000
Gulf Intracoastal Waterway, Louisiana and Texas Section	550,000	24,000	625,000	+99,000

[1] Fully funded.

The comparison between funds available in FY 1986 to funds requested for FY 1987 is more indicative of the status of each study in the study process as opposed to the impact of the reduction.

Question. In addition, please provide a similar report with regard to the New Orleans District's projects for general construction, operation and maintenance, and the Mississippi River and Tributaries, for the Seventh Congressional District and for the State of Louisiana.

Answer. Across the board reductions of 4.3 percent are assigned to all Corps projects, studies, and activities in Louisiana that received budget authority in FY 1986. Certainly this will have some impact but not of such a significant nature so as to create insurmountable problems. Some minor slippage will occur in schedules but sufficient management flexibility is available to the Corps to assure that those things that need to get done will get done. The FY 1987 budget request incorporates the "Balanced Budget and Emergency Deficit Control Act of 1985," and in general, it has not been necessary to reflect adjustments in our schedules.

ATCHAFALAYA BASIN FLOODWAY SYSTEM

Question. In a November 1, 1985 letter, Assistant Secretary of the Army for Civil Works, Robert Dawson, to OMB Director James Miller, Mr. Dawson recommended

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that most of the environmental features of the Atchafalaya Basin Floodway System Plan be deleted. Without the environmental features, the coalition which supports the Atchafalaya Basin plan will dissolve and we will lose years of effort and cooperation of the various interests in the Basin. What is the rationale for abandoning the proposal which had the support of the coalition?

Answer. Some hard choices must be made in this time of large budget deficits. Considering this project with the Atchafalaya Basin, Louisiana, project, there is over $1 billion in work left to do in the Atchafalaya Basin. Only one-tenth of that total is unscheduled. In reaching this decision, we took into account the fact that in the State of Louisiana the Corps has already acquired over 112,000 acres for fish and wildlife purposes, the Department of Interior manages almost another 250,000 acres of national wildlife areas, and the State has another 331,000 acres in wildlife management. In view of the large number of acres that are currently set aside for fish and wildlife, it seems reasonable to schedule or to prioritize the needed flood control improvements before we commit Federal funding for another 367,000 acres of environmental easements. After all, flood control is the main purpose of the project. There are those who would disagree, but this is one of many hard choices that must be made in view of shrinking Federal dollars for all programs.

PROPOSED WETLANDS LEGISLATION

Question. In H.R. 6 (H.R. 3670), which recently passed the House of Representatives, Rep. Breaux inserted a provision which authorizes the Corps of Engineers to develop and implement projects to create, protect, restore, and enhance wetlands in conjunction with navigation and flood control projects in the Lower Mississippi Valley. If this provision were to become enacted, what, at this time, in the Corps' opinion, would be some prospective projects which could use this authority and what might be the projected costs to carry out such an authority?

Answer. This legislation is being proposed without benefit of a Corps report which would determine the need, benefits, and costs of implementation of this program to individual projects. Essentially all projects within the Lower Mississippi Valley may be impacted and might use this authority to develop and implement project modification for the creation, protection, restoration, and enhancement of wetlands upon passage of this legislation.

Mrs. BOGGS. Thank you, Mr. Chairman.

GENERAL INVESTIGATIONS

LOUISIANA COASTAL AREA HURRICANE PROTECTION STUDY

General Sands, in the Louisiana Coastal area hurricane protection project, what areas of Louisiana will the Louisiana Coastal Area study focus on?

General SANDS. Well, we are basically going to look at all of those areas that are currently unprotected within the Louisiana Coastal area to determine whether or not there is something that has been missed in previous attempts to insure that we have adequately covered all of the major developed areas.

Mrs. BOGGS. This is the fourth study, of course, that you have initiated under the general heading of "Louisiana Coastal Area Studies", and taken together, why are these studies embarked on, and what information has been developed so far?

General SANDS. As you are aware, there is immense concern about the tremendous loss of coastal wetland areas within the State of Louisiana, estimated to be somewhere in the area of 40 square miles on an annual basis. There is only one area where you have a natural delta building process, and that is within the Atchafalaya Bay area. There is a particular attempt throughout this study to be sure we have taken a look at all those activities that have a detrimental impact on the Louisiana Coastal Area and determine whether or not practical solutions are available within the

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area to maybe not necessarily stop the process, but at least to reduce the rate of degradation.

Mrs. BOGGS. I have additional questions which I will submit for the record.

[The information follows:]

UPPER BAYOU TECHE

Mrs. BOGGS. Please give us a status report on the Upper Bayou Teche Study.

General SANDS. Ma'am, the reconnaissance phase of the study will be completed in June 1986. Assuming a favorable report, FY 1986 funds will be used to initiate the feasibility phase of the study which is scheduled for completion in December 1988. The alternatives under consideration include channel enlargement to provide additional fresh water, control structures to reduce saltwater intrusion in lower Vermilion Parish, and revision of operating procedures for the Bayou Courtableau Drainage structure.

MISSISSIPPI DELTA REGION SALINITY CONTROL STRUCTURES

Mrs. BOGGS. What is the status of the Mississippi Delta Region study?

General SANDS. Ma'am, a combined General and Detailed Design Memorandum for the Caernarvon structure was approved in November 1985. In FY 1986, work under the Advanced Engineering and Design category will continue on plans and specifications which are scheduled for completion in March 1987. We are also continuing our formulation of a detailed, pre- and post-operation water and sediment monitoring plan.

In November 1984, a Post-Authorization change report was submitted recommending that the authorized Myrtle Grove Structure on the west bank of the Mississippi River be moved upstream to the Davis Pond site. The report is presently under review at Headquarters, U.S. Army Corps of Engineers.

CONSTRUCTION, GENERAL

MISSISSIPPI RIVER-BATON ROUGE TO THE GULF

Mrs. BOGGS. In your statement, you alluded to rehabilitating the training works and other features at Southwest Pass. Could you, number one, elaborate on the problems in this area and also tell us what the impact is in the loss of project depth, even for short periods of time, what kind of impact that has on commerce along the river?

General SANDS. Well, as you know, the navigation depths in the Mississippi River from the Gulf to Baton Rouge is authorized at a 40-foot project depth. The most critical section is that section in Southwest Pass where you enter from the Gulf into the main stem Mississippi system. We have a significant sedimentation problem in this particular area. We have over the past decade dredged somewhere in the neighborhood of 25 million plus cubic yards annually f om this particular area.

The purpose of the training works is to establish a well-defined channel to maximize the flows through the area to minimize the deposition of sediment and create as much as you can a self-scouring channel in that area. Of course, and as I indicated in the presentation, right now we are only able to provide that authorized depth about 70 percent of the time, and this has a significant impact on the capacities of the vessels that currently use this particular system. This translates to losses of about $100 million in average annual navigation benefits when compared to maintaining project depth 90 percent of the time.

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With the time it takes to offload and load vessels, of course, we don't have an ability to project what drafts may be available in the system once the ship is loaded. So if a ship comes in, it is loaded to the 40-foot draft, which is available the week it comes in. It loads. It takes two-and-a-half to three weeks to do that, and then the authorized depth is maybe not available for exit. Of course, it has to either offload for the vessel to navigate the channel or wait until the authorized draft is restored. So we have been working in this particular area.

We had several critical items of foreshore dikes and bank nourishment that were accomplished in 1985 and 1986, and we are going to continue to work on the most critical elements of this until we have the rehabilitation program in place.

Mrs. BOGGS. You have shown us a vast network of navigation channels throughout the system over which you have jurisdiction and responsibility, and all of it could be bottlenecked unless we have Southwest Pass properly taken care of. Is that so?

General SANDS. Southwest Pass is certainly the key to deep draft navigation in the Mississippi River System.

MISSISSIPPI RIVER SHIP CHANNEL

Mrs. BOGGS. In connection with the Mississippi River Ship Channel project, do you feel that progress is being made toward negotiating the cost sharing agreement with the State of Louisiana for the project?

General SANDS. Yes, ma'am. As I indicated, our New Orleans District is in the process of doing that right now. I am not aware of any significant problems at this particular point. A draft local cooperation agreement is currently being reviewed by the State.

SALTWATER INTRUSION

Mrs. BOGGS. What is the status of your investigations of the saltwater intrusion problem?

General SANDS. As I indicated, part of the problem that we will have, or we anticipate, as a result of increased draft in the Mississippi River is the fact the saltwater wedge from the Gulf will travel further up the river. As part of the project we have a mechanism to be placed in the bottom of the river to inhibit the progress of that particular saltwater wedge so that it will minimize the impact on freshwater resources for the communities. In addition to the submarine sill, there will be facilities on land for raw water storage reservoirs or a pumping plant and raw water extension lines.

Mrs. BOGGS. I have additional questions which I will submit for the record.

[The information follows:]

Mrs. BOGGS. For the record, please summarize the findings of the Environmental Impact Study conducted for the project?

General SANDS. Yes, Ma'am. Significant environmental impacts would result from the increase in saltwater intrusion in the Mississippi River caused by the channel enlargement and from the deposition of dredged material due to channel enlargement and increased maintenance dredging requirements. The effects of the increased saltwater intrusion on municipal water supplies would be mitigated by a salinity control submarine sill and pipeline extension to existing treatment plants. The dredged material would be deposited in the Mississippi River except near the

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mouth of the river where it would be used to create marsh in overbank areas that are currently experiencing severe marsh loss due to erosion and subsidence.

Mrs. BOGGS. Are the environmental effects of the project, on the whole, positive or negative? Why?

General SANDS. Generally, the environmental effects are in balance. The beneficial effects of the creation of an estimated 35,000 acres of marsh over the project life balance out the loss of bay bottoms and adverse water quality impacts, and impacts of saltwater intrusion will be mitigated.

Mrs. BOGGS. Please explain the decrease in the current Federal cost estimate for the project.

General SANDS. The decrease in Federal cost is based on more detailed planning reflected in the General Design Memorandum and adjustments between Federal and non-Federal cost estimates consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

MISSISSIPPI RIVER—GULF OUTLET

Mrs. BOGGS. What is the status of the replacement of the lock connecting the Mississippi River and the Gulf Outlet?

General SANDS. Ma'am, a draft Evaluation Report documenting the Phase I studies, including a tentatively selected plan, was submitted in April 1982. A revised draft Evaluation Report incorporating review comments was completed in November 1982. Governor Edwards' letter in 1985 gave the necessary assurances to proceed with the coordination of an appropriate course of action for public involvement and to process the Evaluation Report. We are now updating the costs and benefits and will also start our final public coordination. The final Evaluation Report and Environmental Impact Statement are scheduled to be submitted for review in February 1987.

RED RIVER WATERWAY

Mrs. BOGGS. I was interested in the request for funds for the Red River Waterway in fiscal year 1987. Could you explain the plans for the use of these funds?

General SANDS. Yes, ma'am. As I indicated, the funds in fiscal year 1987 will be used to continue the work for Pools 1 and 2.

Mrs. BOGGS. What is the Administration's policy regarding the efforts to expedite the scheduled completion of this project beyond Lock and Dam 2?

General SANDS. As it stands right now, no work is scheduled in the upper reaches of the project.

Mrs. BOGGS. I have additional questions on this matter which I will submit for the record.

[The information follows:]

Mrs. BOGGS. What is the status of feasibility studies for the inclusion of hydropower as a project purpose for the Waterway project?

General SANDS. We are continuing the hydropower studies and preliminary analyses indicate that the addition of hydropower appears economically feasible. The current schedule is to complete the study in late FY 1987. However, based on current policy, non-Federal development through the Federal Energy Regulatory Commission process has priority over Corps development. The Red River Waterway Commission has indicated a willingness to sponsor Federal hydropower development and provide all of the hydropower costs prior to the start of construction provided satisfactory contract arrangement for the disposition and repayment of those funds can be arranged.

Mrs. BOGGS. As you know, there is a serious threat to the integrity of key railroad tracks that pass along the bank of the Red River near the Carroll Cutoff. Does the Corps have the authority to stabilize the river bank in this area as part of the Red River Waterway project or as part of the emergency bank stabilization effort? If not, why not? Can the Corps take any steps to help with this problem?

General SANDS. The Corps does not have the authority to stabilize the bank at Carroll under either the Red River Waterway project or the Red River Emergency Bank Protection project. Both of these authorities apply only to work on the planned navigation alignment. The area of bank caving is in a bendway which will

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eventually be cutoff from the navigation channel by the planned Carroll Realignment. Although completion of the realignment should halt the river's attack on the caving bank, it could not be constructed in time to solve the immediate caving problem. The Corps can offer technical assistance regarding measures to stablize the bank; but in the absence of specific legislative authority, the Corps cannot take an active role in providing bank stabilization.

GRAND ISLE

Mrs. BOGGS. Has a decision been reached yet regarding emergency repairs to the Grand Isle Hurricane Protection Levee?

General SANDS. I have recommended to higher authority that the project be restored to the original constructed condition, along with certain improvements. We have recommended that the work be accomplished with available Federal and non-Federal project funds, plus Public Law 84-99 emergency funds. The request for emergency funds is presently under consideration. Depending upon funding availability, a construction contract could be awarded by June 1986.

LAKE PONTCHARTRAIN AND VICINITY HURRICANE PROTECTION

Mrs. BOGGS. I was pleased to hear you note that the Lake Pontchartrain hurricane protection levee provided protection to the New Orleans area during the hurricanes that hit the Louisiana Coast. Could you please give us the status report on that project, what level of protection do you feel the project currently gives to the people of the area?

General SANDS. That particular protection is going to vary because, as you can appreciate, within the totality of the area, we have a partially completed system with levees at different heights, so I would say that the protection will range in the area from 60 years up to the Standard Project Hurricane protection, but in excess of 60 years generally in all areas of the project except St. Charles Parish where construction has not been started.

Mrs. BOGGS. Does any need currently exist for additional mitigation features for the project?

General SANDS. I am not aware of any problem in the area of mitigation at this point; however we are studying the matter.

Mrs. BOGGS. I have additional questions on this matter I will submit for the record.

[The information follows:]

Mrs. BOGGS. The Federal cost estimate for this project has decreased in the past year. Why has this occurred?

General SANDS. Ma'am, the previous Federal cost estimate was based on survey scope estimates included in the Reevaluation Report that recommended construction of the high level plan of protection. Since approval of the Reevaluation Report, we have completed three detailed General Design Memorandums for areas along the New Orleans Lakefront. These reports identified substantial reductions in the construction cost. Adjustments in the estimated inflation allowance through the construction period and competitive bidding on five high level construction contracts awarded last year also contributed to the decrease.

LAROSE TO GOLDEN MEADOW

Mrs. BOGGS. There was considerable flooding in the Larose-Golden Meadow area as a result of this Summer's hurricanes. When will the hurricane protection levee under construction be sufficiently completed to provide some level of protection to the area?

General SANDS. Ma'am, the Larose to Golden Meadow project currently does provide some degree of protection. Hurricance Juan is the only storm that has caused major flooding in the project area since Hurricane Carmen in September 1974. We have not computed a degree of protection for existing conditions; however, a first lift at all locations would certainly be a milestone, and this is scheduled for completion

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in 1990. Of the 40 miles of loop levee, 26 miles of first lift construction are in place or underway. In addition, the Golden Meadow Floodgate was recently completed and the Larose Floodgate is scheduled for completion later this year.

Mississippi River and Tributaries Program

CONSTRUCTION

STATUS-MISSISSIPPI RIVER AND TRIBUTARIES LEVEE AND CHANNEL WORK

Mrs. Boggs. What portion of the entire Mississippi River and Tributaries project is currently complete, what portion of the project in Louisiana is currently complete, what portion of the levees and channel work in Louisiana is currently complete, and could you please provide a dollar estimate of local contributions to the entire project and to the project in Louisiana?

General Sands. If I may, I would be pleased to provide answers to all of those question's for the record.

Mrs. Boggs. I would be pleased to have them for the record.

[The information follows:]

Status of Completion of the Mississippi River and Tributaries Project

As of 30 September 1985, the entire Mississippi River and Tributaries project was approximately 77 percent complete. The main stem channel and levee work are about 84 percent complete, whereas the channel and levee work in the tributary basins are about 63 percent complete and 60 percent complete, respectively.

The revetments and dikes completed in Louisiana include about 405 miles of revetments and 15 miles of dikes. Channel improvements to be included in the system in Lousiana when completed total approximately 530 miles, of which 79 percent were complete through 30 December 1985. Levees and floodwalls authorized for the system in Louisiana total 1,500 miles, of which about 93 percent are in place, and 54 percent were built to approved grade and section through FY 1985. Surfaced roads on the project levees in Louisiana will total about 1,450 miles when completed. About 73 percent of these roads were completed at the end of FY 1985.

Approximately 93 percent of the authorized project levees in Louisiana are in place, and 54 percent are currently to approved grade and section. In addition, about 75 percent of the channel work in Louisiana is complete.

While our records may not be complete, they do not indicate that the expenditures for levees by state and local organizations in the project area have amounted to $968 million through December 1984. Of this amount, $514 million, or 53 percent, was expended for levees in the New Orleans District, entirely in Louisiana; and $122 million, an additional 13 percent, was expended for levees in the Vicksburg District, which encompasses a portion of Louisiana.

Mrs. Boggs. What channel features do you propose to fund in Louisiana in FY 1987?

General Sands. We plan to place revetment at 15 locations in the Mississippi River in Louisiana in FY 1987, as shown below:

Channel features in Louisiana funded in FY 1987

	Approximate length in feet
Revetment Location:	
Morville	3,000
Glasscock Cutoff	6,700
Bougere Bend	2,000
Bayou Sara	10,000
Faulkner Lake	7,500
White Castle	1,300
Burnside	2,500
Rich Bend	5,000

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	Approximate length
Angelina	6,500
Scarsdale	2,000
Alliance	5,900
Myrtle Grove	1,600
Venice	12,000
Jesuit Bend	2,190
Diamond	2,060

Mrs. BOGGS. What levee features do you propose to fund in Louisiana in FY 1987?
General SANDS. I would like to provide that information for the record.
[The information follows:]

LEVEE FEATURES IN LOUISIANA FUNDED IN FY 1987

Mississippi River Levees:
a. New Starts:
Montegut—Independence, Floodwall, Mile 93.9 to Mile 93.3 L
Jackson—Thalia Floodwall, Mile 97.2 to Mile 95.6 L
Westwego Levee Enlargement, Mile 105 to Mile 100 R
Bridge City Levee Enlargement, Mile 107 to Mile 105 R
Smithfield—Lobdell Levee Enlargement, Mile 248 to Mile 234 R
Waggaman Levee Enlargement, Mile 110 to Mile 108 R
b. Ongoing Contracts:
English Turn Levee Enlargement, Mile 81.6 to Mile 75.6 L
Barracks—Montegut Floodwall, Mile 94.3 to Mile 93.9 L
Laplace—Destrehan Levee Enlargement, Mile 133 to Mile 121 L
Stella—Belair Levee Enlargement, Mile 72.2 to Mile 66.0 L
Atchafalaya Basin:
a. New Starts:
E44 Levee Enlargement
W46 Levee Enlargement
W52 Levee Enlargement
E22 Levee Enlargement
E28 Levee Enlargement
Wax Lake Outlet Control
E96 Sheetpile
E123 Sheetpile and Levee Enlargement
E84 3rd Lift
b. Ongoing Contracts:
W58 Levee Enlargement
W68 Levee Enlargement
W61 Levee Enlargement
E52 Floodwall
Morgan City Floodwall North Brashera
E99 Sheetpile

HIGH PRIORITY PROJECTS

Mrs. BOGGS. Once the Old River structure is complete, what project inherits the title of number one Civil Works project?

General SANDS. I am not sure. We would have to let the Director of Civil Works take a look at the vast array of projects that he has. But I would say, in our particular area, in terms of structural projects, Lock and Dam 26 will certainly share in that. Of course, we never want to get away from our responsibilities for flood control.

As I indicated, our major projects for hurricane protection are going to be right there, but the major construction item we will have will be the Lock and Dam 26 Replacement.

Mrs. BOGGS. I have additional questions which I will submit for the record.

[The information follows:]

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ATCHAFALAYA BASIN, LOUISIANA

Mrs. BOGGS. What are your plans for work in the Atchafalaya Basin as proposed in this budget?

General SANDS. The requested amount of $35,600,000 for FY 1987 will be used to initiate and complete one and initiate seven new levee items and the Wax Lake Outlet Control Structure; complete the Morgan City Floodwall North along with five addtional levee construction items; and continue with the acquisition of rights-of-way and engineering and design efforts to maintain our current schedule. The funds requested are to be used to raise the most deficient sections of levee and floodwalls thereby increasing the capacity of the floodway.

Mrs. BOGGS. What about the newly authorized work?

General SANDS. With funds requested in FY 1987 for the Atchafalaya Basin Floodway System, we will perpare a Real Estate Design Memorandum to determine final real estate requriements in advance of acquisition of the flood control and developmental control easements in the Atchafalaya Basin.

Mrs. BOGGS. Why is the Atchafalaya Basin an integral part of the Mississippi River flood control plan?

General SANDS. The Atchafalaya Basin project, authorized in 1928, is one of the Main Stem components which comprise the plan of improvement for the control of floods on the Mississippi River. The contribution of each element to the overall plan is inseparably related to that made by the others. Studies indicate that the project flood against which the flood control protection works are designed will be of such magnitude that 3,000,000 cubiic feet per second will pass the latitude of Old River. Since the Mississippi River below the Morganza Floodway can carry only 1,500,000 cubic feet per second, the other one-half must be diverted from the main cahnnel. The diversion is made through the Old River Control Structure and the Atchafalaya River, and through the Morganza and West Atchafalaya Floodways. In order to prevent diverted waters from spreading over the rich and highly developed agricultural lands outside of the Atchafalaya Basin, these rivers and floodways have been leveed to confine the diverted flow. This floodway system is, for all practical purposes, a part of the main river system, inasmuch as the integrity of the main river system depends upon its utilization.

PROPOSED COST SHARING LEGISLATION

Mrs. BOGGS. In the budget this year, there are a number of examples of funding based on an agreement between the administration and the Senate Leadership. For the record, would you please list these particular items, and, as you are very much aware, current law prohibits cost sharing requirements for multi-state flood control projects, such as the Mississippi River and Tributaries project.

Should the law remain the same, as I suspect it will, will you require additional budget resources in order to meet your proposed construction schedule for the project in fiscal year 1987? And, if so, please state for the record what the requirement will be.

General SANDS. I will be happy to provide those answers for the record.

[The information follows:]

MISSISSIPPI RIVER AND TRIBUTARIES ITEMS IN FY 1987 BUDGET

SUBJECT TO COST SHARING

Surveys:
Reelfoot Lake, Tennessee
Tiptonville, Tennessee
Eastern Arkansas Regioin (Comprehensive Study), Arkansas
Continuation of Planning and Engineering Studies:
Bushley Bayou, Louisiana
Mississippi and Louisiana Estuarine Areas, Louisiana
St. Johns Bayou and New Madrid Floodway, Missouri
Nonconnah Creek, Tennessee and Mississippi

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Advance Engineering and Design:
Eastern Rapides and South-Central Avoyelles Parishes, Louisiana
L'Anguille River, Arkansas
Construction:
Atchafalaya Basin Floodway System, Louisiana
Eight Mile Creek, Arkansas
Tensas Basin, Arkansas and Louisiana:
Boeuf and Tensas Rivers—Tensas River
Red River Backwater Area—Below Red River
West Kentucky Tributaries, Kentucky
Bayou Cocodrie and Tributaries, Louisiana
Yazoo Basin, Mississippi:
Yazoo Backwater—Yazoo Backwater Pumping Plant
Yazoo Backwater—Rocky Bayou

ADDITIONAL BUDGET RESOURCE REQUIREMENTS

If the law remains the same regarding cost sharing of the Mississippi River and Tributaries project as that contained in the Fiscal Year 1985 Supplemental Appropriations Act, no additional budget resources will be required to meet construction schedules in Fiscal Year 1987. Construction is not scheduled in FY 1987 on any of the Separable Elements on which new cost sharing is presented; therefore, there would be no requirement for a construction on these items in FY 1987 either.

CORPS CAPABILITIES

Mrs. BOGGS. And please provide the Committee with a list of any additional capabilities your Division might have for fiscal year 1987. I have several other questions for you to be answered for the record, General Sands, but in the interest of time, I want to thank my colleagues for their indulgence in allowing me extra time, and, again, I wish to thank you very much for the work that you do, and I pledge my cooperation and that of the Committee in enhancing the navigation possibilities for the nation. I also am very happy to be included as the centerfold of your presentation. Thank you so much.

General SANDS. Yes ma'am. They will be furnished to the Committee.

Mrs. BOGGS. I have some additional questions that I would like to submit for the record.

[The information follows:]

FRESHWATER DIVERSION

Mrs. BOGGS. Three freshwater diversion structures have been proposed along the Louisiana Coast at Caernarvon, Bonnet Carre and Davis Pond. What is the status of these three structures?

General SANDS. The Caernarvon structure, authorized under the Mississippi Delta Region project, has been funded for completion of Advanced Engineering and Design. Plans and specifications for this structure are scheduled for completion in March 1987.

A freshwater diversion structure at the Davis Pond site was recommended by feasibility studies. In November 1984, a Post-Autorization change report for the Mississippi Delta Region project was submitted, recommending that the authorized Myrtle Grove structure on the west bank of the Mississippi River be moved upstream to the Davis Pond Site. The report is presently under review at Headquarters.

The Bonnet Carre structure was recommended under the authority of the Mississippi-Louisiana Estuarine Area Study and has been funded for Continuation of Planning and Engineering studies. Completion of these studies, which provide for completion of general design up to, but not including, preparation of plans and specifications, is scheduled for September 1989.

Mrs. BOGGS. What is the status of local cooperation on these features?

General SANDS. Since cost sharing provisions contained in proposed legislation would not be required until initiation of construction, local interests have not been

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contacted regarding the proposed cost sharing. However, they have been contacted with regard to traditional cost sharing. On the Caernarvon structure, the State of Louisiana furnished a letter of intent in January 1982, to the effect that the State would provide the required local interest share of project costs. The State has provided $200,000 in advance funding to expedite the design work. On the Davis Pond structure, the State of Louisiana furnished a letter of intent on 11 March 1983, indicating its intention to furnish the necessary funding and local cooperation at the appropriate time. On the Bonnet Carre structure, the States of Louisiana and Mississippi would be the non-Federal sponsors for the project. The states furnished letters dated 26 January 1984, and 29 February 1984, respectively, that indicated their intentions to provide the necessary funding and the local cooperation at the appropriate time.

Mrs. BOGGS. Why are they important?

General SANDS. Deterioration of the marshes and estuaries along the lower Mississippi River has long been recognized. This deterioration stems from factors such as subsidence, erosion, and saltwater intrusion. The introduction of freshwater and alluviums from the Mississippi River will serve to reduce this trend in the local area. The projects will benefit existing commercial fisheries by enhancing marsh and estuary conditions, thereby improving the fish and wildlife resources of the area. Recreation and environmental enhancements are secondary benefits.

GRAMM-RUDMAN-HOLLINGS IMPACTS

Mrs. BOGGS. What has been the impact of P.L. 99-177 on Corps projects in the State of Louisiana and within your Division, generally?

General SANDS. The impact of Public Law 99-177 is not so great in FY 1986 that we cannot live with it. A reduction of 4.3 percent has been assigned to all projects, studies, and activities in Louisiana. We feel we have sufficient management flexibility to make sure that those things which need to get done will get done. In general, slippages that will occur as a result of the impact of Public Law 39-177 in FY 1986 or 1987 will be minor, and we don't believe it is necessary to adjust our schedules at this time.

RECOGNITION OF MR. WATKINS

Mr. BEVILL. The chair recognizes Congressman Watkins.

Mr. WATKINS. I would like to follow up on a comment Chairman Whitten made about having an opportunity to stop the water in the mountains and the hill country. My area of the Southeast part of the State of Oklahoma unfortunately, Mrs. Boggs, sends a lot of water, silt and everything down from our area on down into the Mississippi. I wish we could all heed what Chairman Whitten said and maybe I could get some dams up in my area and we could get some of this stopped down the way. That is a very true statement.

Mr. Chairman, I really don't have anything else. I thought I would just make that one comment. I do have questions for the record.

Questions Submitted by Congressman Watkins

RED RIVER BELOW DENISON DAM STUDY

Mr. WATKINS. Your fiscal 1987 budget requested no funding under general investigations for the Red River and Tributaries Below Denison Dam study, which affects Louisiana, Arkansas, Oklahoma, and Texas. Yet, $221,000 was requested and approved for this study for the current year. Why do you propose to drop this study in fiscal 1987?

General SANDS. The $221,000 available for the current year are adequate for completion of the Caddo Lake Enlargement Study and the Cane River Basin Study. Future Continuation of Planning and Engineering requirements are undetermined pending completion of the Cane River Basin Study. No additional interim studies are active under the Red River Below Denison Dam Study, and a Basinwide Summary Report is not required.

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Mr. WATKINS. Where are the projects located that this study encompasses?

General SANDS. This study involves two active interims, the Caddo Lake Enlargement Study and the Cane River Basin Study. Caddo Lake, within the Cypress Bayou Basin, is located in Caddo Parish, Louisiana, and Marion and Harrison Counties, Texas, in the northwest portion of Louisiana and the northeast portion of Texas. The Cane River Basin is located primarily in Natchitoches Parish, Louisiana, adjacent to the right descending bank of the Red River.

Mr. WATKINS. What is the status of this study?

General SANDS. The Caddo Lake Enlargement Study resulted in a negative report and has been terminated. A "Notice of Report" to this effect was issued in January 1986. The Cane River Basin Study is scheduled for completion in September 1986.

Mr. WATKINS. Are all the projects in this study complete? If so, what were the recommendations of the study? If not, don't you think we should complete the study?

General SANDS. Sir, with funds available, all studies planned will be completed. The Caddo Lake Enlargement Study has been terminated in accordance with policy relating to single-purpose water supply projects. A negative report, entitled "Summary of Results", was prepared. The report recommends that the study results be disseminated to local planning officials for their use in implementing water projects and that no further Federal water supply studies be conducted at this time. The Cane River Basin Study is scheduled for completion in September 1986.

Mr. WATKINS. How much funding would you need in fiscal 1987 to complete this study?

General SANDS. Funds provided in FY 1986 are adequate for the survey investigations. Funds for Continuation of Planning and Engineering for the Cane River Basin Study are undetermined at this time pending completion of the feasibility study later this fiscal year.

Mr. BEVILL. Thank you. Mr. Myers.

Mr. MYERS. I have questions for the record.

Questions Submitted by Congressman Myers

LOCK AND DAM 26—SECOND LOCK

Mr. MYERS. General, once construction starts on the second lock at Lock and Dam 26, how long will it take to open it?

General SANDS. Sir, the construction contract for the second lock is scheduled for award in March 1988 and will take about three years to complete. It is scheduled to be open for navigation in April 1991.

Mr. MYERS. What will be the annual savings from the new lock?

General SANDS. Sir, the annual savings to navigation from the second lock are estimated at $182,000,000, based on 1985 prices.

Mr. BEVILL. I have several questions here too, but I am going to submit them for the record.

[The information follows:]

POTENTIAL SPRING FLOODING

Mr. BEVILL. What is the preliminary outlook regarding potential spring flooding?

General SANDS. Sir, main factors that determine the potential for spring flood on the Lower Mississippi River are the amount of snow cover and the timing of the melt, the amount and timing of rainfall, the availability of flood control storage space in the Mississippi River Basin reservoirs, and the condition of the river when the rain or the snowmelt occurs. Currently, all factors are normal and give no indication that there will be a major flood on the Lower Mississippi River this spring. The area of snow cover is near normal for this time of year, and the depth of snow cover is near normal; practically all of the flood control storage space in the Mississippi Basin is empty; the river is near normal and on a recession; and the long-range weather outlook through April indicates that near normal precipitation will occur over most of the basin. Therefore, the magnitude of this year's spring flood, it there is one, will depend entirely on future weather conditions.

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General Investigations

LOUISIANA COASTAL AREA—HURRICANE PROTECTION

Mr. Bevill. Describe the Louisiana Coastal Area Hurricane Protection study, which is one of the new study starts requested by the Administration.

General Sands. Sir, in the reconnaissance phase of the study, we will determine whether feasible solutions may exist to hurricane-induced flooding in 20 coastal Louisiana parishes. A major aspect of the study will be to identify the nature and extent of existing flooding and potential future flooding due to anticipated changes in environmental conditions, such as coastal erosion and land loss. These changes are expected to increase susceptibility of coastal communities to flooding.

Mr. Bevill. Is one year a sufficient time to start and complete this study?

General Sands. Sir, this study, which is the reconnaissance phase, is scheduled to be accomplished as quickly a possible. Our budget request is for all the funds needed for completion of the reconnaissance phase of the study; however, our schedule for completing the study is 15 months, which would be in January 1988. If the reconnaissance phase of the study indicates a possible feasible project, we would recommend continuation of the study effort, which would be 50-50 cost shared with the local sponsor.

OUACHITA RIVER BASIN STUDY

Mr. Bevill. In regard to the Ouachita River Basin study, I note the study report for the Monroe-West Monroe study is scheduled for completion in September of this year. Have you reached any preliminary conclusions?

General Sands. Yes, Sir. We have developed feasible plans for Chauvin Bayou which recommends a pumping plant and directional flow control structure in Canal L-11 and channel improvements on Youngs Bayou and Upper Pine Bayou. Formulation and evaluation of alternative plans for flood control in Raccoon-Petticoat Bayou and for multipurpose water resources plans in Bayou DeSiard are continuing. No feasible plans have been identified for Black Bayou in West Monroe. Bayou DeSiard investigations are being terminated in response to current policy regarding single-purpose water supply studies.

ALEXANDER-PULASKI COUNTIES STUDY

Mr. Bevill. No funds are being allocated to the Alexander-Pulaski Counties, Illinois, study in FY 1986. Why are you resuming the study in FY 1987?

General Sands. Sir, this is a resumption. The seepage and flooding problems in the study area still exists. The FY 1987 funds will permit effort to be resumed on the feasibility phase to identify and analyze alternative solutions to the problems. The final report is scheduled for completion in September 1989.

LOUISIANA COASTAL AREA—LAND LOSS AND MARSH CREATION

Mr. Bevill. In connection with the Louisiana Coastal Area study, could you describe in more detail your plans for creating marsh in three parishes?

General Sands. Sir, we are currently conducting feasibility phase engineering, environmental, and economic investigations to develop a plan for creating marsh in Plaquemines, St. Bernard, and Jefferson Parishes, and to continue investigations to determine the true monetary value of the marsh. We have determined that it is economically feasible to create marsh by controlled breaching of the banks of the Mississippi River's distributaries at five locations and by the judicious placement of material dredged from the navigation channels along the banks. The potential number of feasible solutions would increase if studies result in a greater dollar value being assigned to the marsh.

LAKE CHARLES SHIP CHANNEL

Mr. Bevill. You will complete the feasibility report on the Lake Charles Ship Channel as part of the Mermentau, Vermilion, and Calcasieu Rivers and Bayou Teche, Louisiana, study. What conclusions have you reached as to feasibility?

General Sands. Sir, during the study we examined the feasibility of providing various improvements to navigation. The only economically justified plan is one which involves realignment of the bendway at river mile 26.7. The estimated first cost of construction is $2,612,000, and the benefit-to-cost ratio is 1.5 to 1. The Lake Charles

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Harbor and Terminal District has expressed its support for this project, although a formal letter of intent has not yet been signed.

MERAMEC RIVER BASIN STUDY

Mr. BEVILL. On page 16 the justifications state the Meramec River Basin study has been expanded to include other purposes. What are the "other purposes"?

General SANDS. Sir, in response to Congressional direction, the scope of the study is being expanded from water supply only to include flood control, water quality, irrigation, recreation, and other water related concerns.

PEARL RIVER, SHOCCOE DAM

Mr. BEVILL. Describe the Pearl River Shoccoe Dam, Mississippi, continuation of planning and engineering study which is being initiated in the current fiscal year.

General SANDS. Sir, the project will consist of an earthen dam across the Pearl River at the head of Ross Barnett Reservoir, an emergency spillway in the left abutment, a saddle dike between the dam and the emergency spillway, and a fixed-crest service spillway with associated approach and outfall channels. The dam would be approximately 14,600 feet long; the crest would be 14 feet wide and about 45 feet above the valley floor. The October 1985 estimated project first cost is $81,700,000 and the benefit-cost ratio is 1.2 to 1 at 8-⅝ percent. Current year funds will be used to initiate General Design Memorandum studies. Continuation of Planning and Engineering is scheduled for completion in September 1988.

CAPE GIRARDEAU—JACKSON STUDY

Mr. BEVILL. Explain the purpose of the Cape Girardeau-Jackson, Missouri, study on which planning and engineering studies will be started in FY 1987.

General SANDS. Sir, the recommended project is for local flood protection and recreation. The project includes approximately 3 miles of channel improvement, 8 bridge replacements, 1 dry detention reservoir, and recreation and environmental features. The completed project would reduce the average annual flood damages by 85 percent along Cape La Croix Creek and its tributary, Walker Branch.

RESPONSE TO COMMITTEE DIRECTION

Mr. BEVILL. The FY 1986 House Report directed a full scale reconnaissance and feasibility report on the Meramec River Basin Water Supply Study. What action have you taken in response to the Committee directive?

General SANDS. Sir, the FY 1986 funds are being used to initiate a full scale reconnaissance study in the traditional manner. Activities will include development of a preliminary study schedule and methodology, review of existing data, assessment of existing conditions, and identification of basin problems and needs. The funds requested for FY 1987 will provide for completion of the reconnaissance phase in September 1987.

CONSTRUCTION, GENERAL

FELSENTHAL NATIONAL WILDLIFE REFUGE RECREATION FACILITIES

Mr. BEVILL. Congress has provided funds over the past several years for the construction of recreation facilities in the vicinity of the Felsenthal National Wildlife Refuge in Arkansas. Outline the status of the work at Felsenthal, including the disposition of the funds provided for these facilities.

General SANDS. The development of the recreation facilities in the vicinity of the Felsenthal Wildlife Refuge has been proceeding since their inclusion in the FY 1984 and subsequent Appropriations Acts. The design of these items is continuing, but construction is dependent on the review and approval of design summaries. A detailed summary of the project status and expenditures follows:

FELSENTHAL NATIONAL WILDLIFE REFUGE RECREATION FACILITIES

FY 1984 Appropriations Act: The act included $3.5 million for construction of recreation developments. These are summarized below:

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Item	Construction Cost	Status
Pereogeethe Access Site	$235,000	Completed.
Crossett Harbor Boat Ramp	231,000	Completed.
Jones Lake Access Site	276,100	Completed.
Grand Marais Boat Ramp	332,200	Completed.
Shallow Lake Access Site	415,000	Completed.
Pine Island Access Site	1,190,800	Completed.
Felsenthal Boat Ramp	91,000	Completed.
Shallow Lake Access Road	709,400	Underway.
Total	3,480,700	

FY 1985 and 1986 Appropriations Acts: The FY 1985 and 1986 Appropriations Acts provided $2.5 and $3.5 million, respectively, for design and construction of the remaining recreation development in the Felsenthal National Wildlife Refuge. These are summarized below:

Item	Construction Cost	Scheduled Contract Award
Felsenthal Lock & Dam Site	$600,000	Jul. 1986.
Crossett Harbor Recreation Site	2,397,000	Sep. 1986.
Grand Marias Recreation Site	866,000	Sep. 1986.
Eagle Lake Access Site	236,000	Sep. 1986.
Calion Lock & Dam No. 8 Site	200,000	Sep. 1986.
Nursery Pond	89,000	Sep. 1986.
Calion Lock & Dam Access Site	344,000	Sep. 1987.
Engineering and Dam Design and Supervision and Administration	1,268,000	
Total	6,000,000	

LOCK AND DAM 26, SECOND LOCK

Mr. BEVILL. In connection with the Locks and Dam 26, Second Lock project, the justifications state that obligation and expenditure of budgeted funds for construction of the project are contingent upon enactment of legislation increasing the fuel tax. Since the budgeted funds, $4 million, are only for engineering and design, it would seem logical to proceed with that work so that the project is ready to move forward to construction upon enactment of the fuel tax legislation. Would you comment?

General SANDS. Yes, sir. In FY 1986 we are continuing the engineering and design with funds provided in the FY 1985 Supplemental Appropriations Act in anticipation that the fuel tax legislation will be enacted. However, as the Assistant Secretary of the Army for Civil Works stated in Opening Day testimony, continuation of this effort is dependent on timely passage of the agreed upon increase in the Inland Waterway fuel tax.

MISSISSIPPI RIVER—GULF OUTLET

Mr. BEVILL. In connection with the Mississippi River-Gulf Outlet, Louisiana project, what impact will the Governor of Louisiana's letter of February 11, 1985, have on the issue of local cooperation on the project?

General SANDS. Sir, the Governor's letter reinforces the State's support for the project and their intent to share in the project cost at the appropriate time, contingent upon availability of funds and the State's priorities. This has allowed us to resume work on the reevaluation studies and the required public coordination for the new lock.

MISSISSIPPI RIVER, BATON ROUGE TO GULF

Mr. BEVILL. House Report 99-195 directs the Corps to develop and uninterrupted construction schedule for completion of the Mississippi River Baton Rouge to Gulf project, Louisiana. Secretary Dawson wrote to me on December 19, 1985, indicating

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the Corps would be prepared to discuss the schedule in this year's hearings. Please furnish that schedule for the record.

General SANDS. Sir, I have been advised that the Assistant Secretary of the Army for Civil Works is currently reviewing the report for this project and that an appropriate schedule will be established after that review is complete. Therefore, I am unable to furnish you a schedule at this time.

MERAMEC RIVER BASIN

Mr. BEVILL. Our colleague, Rep. Bob Young of Missouri, is vitally concerned with flooding in the Meramec River Basin. The Committee provided $479,000 for a flood forecasting/flood warning system in the FY 1986 Bill. What is the status of the work?

General SANDS. Sir, the General Design Memorandum is currently under review. Upon approval we will initiate engineering and design of the system and purchase the equipment.

CLARENCE CANNON DAM AND MARK TWAIN LAKE

Mr. BEVILL. Congressman Harold Volkmer of Missouri is interested in the Clarence Cannon Dam and Reservoir/Mark Twain Lake, Missouri project. What is the status of the construction of recreation facilities at the project as addressed by the Committee in the Report accompanying the FY 1986 Appropriation Bill?

General SANDS. Sir, engineering and design for the Spalding Access Area is virtually complete and construction is scheduled to be initiated this summer. The first contract for the Hunter-Fisherman areas are scheduled for award this fall. The final contract will be awarded in the spring of 1987.

OPERATION AND MAINTENANCE

Mr. BEVILL. The FY 1987 budget request for O&M is about level with the 1986 appropriation. Are all projects being maintained in an efficient and economical manner?

General SANDS. Yes, sir. Our budget request for FY 1987 will be adequate for us to maintain all of our projects in an efficient and economical manner.

MISSISSIPPI RIVER AND TRIBUTARIES PROGRAM

GENERAL INVESTIGATIONS

BAYOU DU CHIEN STUDY

Mr. BEVILL. Last year in regard to the Bayou du Chien study you stated a habitat based evaluation of wildlife impacts of alternative improvements would be conducted. What did that evaluation conclude?

General SANDS. Sir, field work in relation to the habitat-based evaluation system was conducted during the summer of 1985. Those efforts indicated a significant acreage of dead and dying forests resulting from excess soil moisture and frequent flooding. These data will be used in projecting future conditions in the absence of a Federal project and in ascertaining impacts, both negative and positive, of alternatives on existing and future habitats. The analysis will be completed in August 1987.

ATCHAFALAYA BASIN STUDY

Mr. BEVILL. In connection with the Atchafalaya Basin study on page 167, you say FY 1986 funds will be used to finalize alternatives for managing the Atchafalaya Delta and the plan formulation process . . . will be resolved. What are these alternatives?

General SANDS. The alternatives consist of the use of various techniques for placing dredged material, the construction of retention structures, or combinations of both of these to direct flows and sediments of the lower Atchafalaya River in order to optimize delta growth.

REELFOOT LAKE AND TIPTONVILLE STUDIES

Mr. BEVILL. Describe the Reelfoot Lake and Tiptonville, Tennessee, studies which are being initiated in the current fiscal year.

General SANDS. Sir, the purpose of the Reelfoot Lake, Tennessee, study is to determine the problems and needs of Reelfoot Lake and vicinity and possible solutions as

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related to flood control, water supply, and other purposes. The reconnaissance phase study has been initiated and is scheduled to be completed in June 1987. The feasibility phase will be initiated with funds requested in FY 1987 and is scheduled for completion in November 1989. The Tiptonville, Tennessee, study addresses flooding in the urbanized area of Tiptonville and adjacent farmland from overflow due to high Mississippi River stages. The reconnaissance phase study has been initiated and is scheduled to be completed in December 1986. The feasibility phase will be initiated with funds requested in FY 1987 and is scheduled for completion in April 1988.

EASTERN RAPIDES AND SOUTH-CENTRAL AVOYELLES PARISHES, LOUISIANA

Mr. BEVILL. Explain the change from FY 1986 in annual benefits shown for the Eastern Rapides and South-Central Avoyelles Parishes, Louisiana, on page 182 of the justifications.

General SANDS. Average annual benefits decreased from $11,956,000 in FY 1986 to $11,811,000 in FY 1987, a total decrease of $145,000. This change reflects a reduction of flood control benefits by $226,000 due to changes in current normalized agricultural price levels, offset by increases of $45,000 in area redevelopment benefits due to change in the interest rate, $15,000 in commercial fisheries benefits due to an increase in crawfish prices, and $21,000 in savings in authorized improvement benefits due to changes in the estimated cost of construction.

MISSISSIPPI RIVER AND TRIBUTARIES—CONSTRUCTION PROGRAM

Mr. BEVILL. The FY 1987 request for projects in the construction category is about $30 million less than the FY 1986 appropriation level. What impact will the reduction have on your FY 1987 program?

General SANDS. Sir, most of this reduction is reflected in the reduced requirements for the Old River project which is in its last year of construction. We do not feel that this reduction will impact our FY 1987 program in any significant way.

ATCHAFALAYA BASIN FLOODWAY SYSTEM

Mr. BEVILL. Describe the Atchafalaya Basin Floodway System, Louisiana, project which was funded for initiation in the FY 1985 Supplemental Appropriations Bill.

General SANDS. Sir, the project consists of acquisition of real estate interests, excluding minerals, for flowage and multipurpose environmental easements, some fee simple titles, and participation with the State of Louisiana in fee title purchase for the purpose of public access of approximately 50,000 acres from willing sellers. Federal cost participation will be limited to $32,000,000. The State will provide additional public access of 150,000 acres of existing state-owned lands and more than 30,000 acres donated to the State by Dow Chemical Company and acquisition of flowage easements on approximately 59,000 acres and developmental control rights on approximately 367,000 acres, excluding developed ridges; multipurpose environmental easements over the same 367,000 acres, excluding developed ridges; and fee simple title, excluding minerals, on 1,500 acres, for recreation purposes. In addition, the project includes construction of recreation facilities; initial construction of "pilot" management units, with implementation of future units to be dependent on operational success of the pilot units and construction of miscellaneous canal closures and water circulation improvements in the lower floodway.

Mr. BEVILL. How will the $970,000 requested in the FY 1987 budget be used?

General SANDS. The requested amount of $970,000 for the Atchafalaya Basin Floodway System will be used for mapping, title evidence, and appraisals to determine final real estate requirements in advance of acquisition of the flood control and developmental control easements in the Atchafalaya Basin.

Mr. BEVILL. How does this project relate to the overall Atchafalaya Basin project?

General SANDS. The floodway of the Atchafalaya Basin project serves as an outlet to carry up to one half of the Mississippi River project flood flow. The floodway contains nationally significant expanses of bottomland hardwoods and swampland which are subject to dynamic change. Because of the unique character of the project area and the numerous special interests competing for use of the resources, Congressional action and decisions of the Chief of Engineers directed that management alternatives for the project be developed to provide flood protection and to preserve and enhance the resources of the region. The features of the Atchafalaya Basin Floodway System are actions proposed to assure that these resources would be preserved, managed and propagated, as far as practicable, within the constraints of passing the Mississippi River project flood flow through the floodway.

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EIGHT MILE CREEK, ARKANSAS

Mr. BEVILL. With regard to the Eight Mile Creek, Arkansas, project, explain the statement on page 254 that "remaining work on the rural portion is indefinite pending a decision to initiate construction."

General SANDS. Due to concerns about the incremental justification of the downstream rural portion of the project, the Assistant Secretary of the Army for Civil Works directed that only the urban portion be scheduled for construction. Planning and Engineering studies presently underway will establish the extent that the rural improvements are needed and justified. Either downstream enlargement or easements to allow for increased flooding may be required in the rural reach.

WEST KENTUCKY TRIBUTARIES, KENTUCKY

Mr. BEVILL. What is planned in connection with the reformulation of the West Kentucky Tributaries, Kentucky, project?

General SANDS. Sir, the local project sponsor requested by letter of 6 April 1984, a clearing and snagging plan of improvement on the Obion Creek in lieu of the planned channel enlargement and diversion. The reformulation studies will evaluate the clearing and snagging alternative, and upon its completion, a recommendation will be made concerning future plans for the project.

YAZOO BASIN, YAZOO BACKWATER PUMPING PLANT

Mr. BEVILL. The FY 1986 Energy and Water Development Appropriation Bill contains $5 million for the Yazoo Backwater Pumping Plant to initiate the channel work and pump and motor contract in accordance with approved design documents as modified with the discretionary authority of the Chief of Engineers. What action has been taken on this directive, and what funds are contained in the 1987 budget for this work?

General SANDS. Sir, our budget request for FY 1987 contains no funds for the Yazoo Backwater Pumping Plant. The pumping plant is being downsized from 17,500 cubic feet per second to 10,000 cubic feet per second in order to reduce the cost of the project. We are proceeding with the advertisement for a contract to construct the inflow and outflow channels and engineering and design. However, award of a contract for pumps and motors is being deferred pending results of the studies on downsizing the pumping capacity of the plant and upon local interests agreeing to cost share on the project in accordance with cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

BANK EROSION WORK—GREENWOOD, MISSISSIPPI

Mr. BEVILL. $4 million is included in the FY 1986 bill for bank erosion work at Greenwood, Mississippi. What is the status of that work and what follow on work is planned in FY 1987?

General SANDS. General plans are currently under review. The funds provided in FY 1986 will be used to award a contract for Greenwood Bendways Site 3 in August 1986, a contract for Site 4 in September 1986, and a contract for Site 5 in October 1986. The FY 1987 budget request does not contain any funds for additional bank erosion control work at Greenwood.

OPERATIONS AND MAINTENANCE

MISSISSIPPI RIVER LEVEES SETBACK PROGRAM

Mr. BEVILL. What accounts for the $7.3 million reduction in the Mississippi River levee setback program compared with FY 1986?

General SANDS. Sir, FY 1986 was a rather unusual year for the Mississippi River levee setback program. In the summer of 1985, a levee failure occurred in the Marrero area of metropolitan New Orleans which required unscheduled major repairs to the levee system. This work, known as the Celotex emergency levee repair, was completed in FY 1986 just before the threat of high water in the Mississippi River. Significant amounts of funds are also included in the FY 1986 program for acquisition of rights-of-way and relocation of facilities in advance of other scheduled levee setbacks.

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HATCHIE RIVER

Mr. BEVILL. PL 99-88, the FY 1985 Supplemental directed that snags and debris be removed from the Hatchie River in Mississippi. What has been done in response to the language of the Supplemental Act?

General SANDS. Sir, the snags and debris were removed from the Hatchie River in August 1985, and the final cleanup work and dressing of the river banks was completed in February 1986.

Mr. BEVILL. General Sands, thank you for your usual excellent presentation.

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WEDNESDAY, FEBRUARY 26, 1986.

SOUTH ATLANTIC DIVISION

WITNESSES

BRIGADIER GENERAL CHARLES E. EDGAR III, DIVISION ENGINEER
WILLIAM R. DAWSON, CHIEF, PROGRAM DEVELOPMENT OFFICE
WILLIAM H. OSBORNE, ASSISTANT CHIEF, PROGRAM DEVELOPMENT OFFICE

Mr. BEVILL. General Edgar, we are pleased to have you and your staff with us. We realize you represent the most important part of the country.

General EDGAR. Mr. Chairman, I cannot argue with that.

Mr. BEVILL. As is customary, we would like to get a biographical sketch on you for the record.

General EDGAR. All right, sir.

[The biographical sketch follows:]

BRIG. GEN. C.E. EDGAR III, DIVISION ENGINEER AND COMMANDER, U.S. ARMY ENGINEER DIVISION, SOUTH ATLANTIC

BIOGRAPHY

Brigadier General C. Ernest Edgar III has been Commander and Division Engineer of the U.S. Army Corps of Engineers' South Atlantic Division since September 3, 1985. In this assignment he is responsible for the military and civil work planning, design and construction program in seven southeastern states, Puerto Rico, the U.S. Virgin Islands, the Panama Canal and Latin America, with an annual budget of over $800 million. Included is responsibility for all Army and Air Force construction in this region, as well as the Corps of Engineers' water resources development program in the Southeast.

Prior to his current assignment, General Edgar was Acting Director of Civil Works in the Corps of Engineers' headquarters in Washington, D.C. Before that, he was Deputy Director of Civil Works.

A 1958 distinguished military graduate of the Virginia Military Institute where he received a bachelor of science degree in civil engineering, he also holds a master's degree in civil engineering from Iowa State University of Science and Technology. He has attended Harvard University's Advanced Management Program for Senior Executive Fellows, is a graduate of the U.S. Army Command and General Staff College and graduated with distinction from the U.S. Naval War College. General Edgar is a registered professional engineer in Kentucky and Alabama.

General Edgar's other recent command assignments include Commander and Division Engineer of the Corps' New England Division; Commandant of Cadets and Professor of Military Science; Virginia Military Institute; Commander and District Engineer, Little Rock District; Commander of the 577th Engineer Battalion (Construction), Vietnam; Company Commander, 237th Engineer Battalion (Combat), Germany, among others.

Staff assignments have included service as Executive Officer, U.S. Army Engineer School, Fort Belvoir; Executive and Assistant Director of Civil Works, Office of the Chief of Engineers in Washington, D.C.; and Staff Officer in the Office of the Deputy Chief of Staff for Military Operations and the Office of Personnel Operations, Department of the Army, Washington, D.C.

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Among his military decorations are the Legion of Merit (three awards), the Bronze Star Medal, the Meritorious Service Medal, the Army Commendation Medal (two awards) and the Air Medal.

General Edgar is a native of Mobile, Alabama. He is married to the former Mary Elizabeth Brown also of Mobile. They have three children: Ernest, Elizabeth and William.

Mr. BEVILL. You may proceed as you wish.

General EDGAR. Thank you, sir.

INTRODUCTION

Mr. Chairman and members of the committee, I am pleased to make my first appearance before you as the South Atlantic Division Engineer. With me are Mr. William R. Dawson and Mr. William H. Osborne of our Program Development Office. This morning I will summarize our budget request for fiscal year 1987 and provide a brief status report highlighting the Division's Civil Works Program and some of our accomplishments.

DIVISION AREA

The South Atlantic Division's Civil Works area comprises all or part of seven southeastern States, Puerto Rico and the U.S. Virgin Islands. The area is rich in energy and water resources. Our headquarters is in Atlanta, and we have five District offices located in Wilmington, Charleston, Savannah, Jacksonville, and Mobile.

DISASTERS

This past year has probably been one of the worst years in history for disasters in our region, which has suffered some of the worst floods on record in Virginia, Alabama, Mississippi, and Puerto Rico. Our coastline has been subjected to the largest number of hurricanes in any one year. We are conducting comprehensive hurricane evacuation studies along the East and Gulf Coasts. Although these studies are still underway, preliminary results were used extensively by State and local officials in carrying out emergency preparedness activities during this past hurricane season.

FISCAL YEAR 1985 SUPPLEMENTAL ACT

NEW START PROGRAM

Before presenting the Fiscal Year 1987 program, I would like to discuss the six new construction projects included in the Fiscal Year 1985 Supplemental Appropriations Act.

MOBILE HARBOR DEEPENING, ALABAMA

The Mobile Harbor deepening project in Alabama provides for deepening the 42-foot channel to 55 feet from the Gulf of Mexico for about 30 miles into Mobile Bay at a width of 550 feet. The project is scheduled to be constructed in phases. The first phase will enlarge the channel from the Gulf to a transshipment facility which will be constructed just inside Mobile Bay by local interests. The local cost-sharing agreement is scheduled to be signed in June of this year with construction beginning in Fiscal Year 1987.

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WILLIAM BACON OLIVER LOCK AND DAM, ALABAMA

The existing William Bacon Oliver lock and dam in Alabama is the constraining factor to efficient commodity movement on the Warrior River System.

MOBILE HARBOR, ALABAMA

Mr. BEVILL. General, would you back up to the last one? What are you doing with the channel? That is completed, isn't it?

General EDGAR. That is the Mobile Harbor, sir. What we would be doing there is widening the channel from the Gulf, crossing into the bay, to the transshipment facility which would be constructed by locals.

Mr. BEVILL. Could you describe the transshipment facility?

General EDGAR. This would be a facility that local interests would construct that would allow them to offload vessels at that point and move the shipments into the upper harbor.

Mr. BEVILL. If you are deepening the harbor, why do you require this facility?

General EDGAR. Sir, local interests want to construct the project in phases to reduce their cost share. The initial portion of the project would allow them to do that. Then they would come back at a later date for the remaining work.

Mr. BEVILL. Again, are you going to need that facility once the harbor is deepened? Do you still need it?

General EDGAR. No, sir, you would not.

Mr. BEVILL. So, that is a temporary item?

General EDGAR. That would be a temporary item, yes, sir.

Mr. BEVILL. All right. Fine.

OLIVER LOCK AND DAM, ALABAMA

General EDGAR. The existing William Bacon Oliver lock and dam in Alabama is the constraining factor to efficient commodity movement on the Warrior River System. The new lock and dam site is located about one-half mile downstream on the opposite side of the river. That is near the bottom of the left slide. A local cost-sharing agreement is not required for this project, since it is a part of the inland waterway system. Land acquisition is being accomplished this year, along with the initial construction of the access road.

TAMPA HARBOR BRANCH CHANNELS, FLORIDA

The branch channels, shown in red, in the upper Tampa Harbor, Florida project will be improved to accommodate larger vessels. The channels vary in length, width and depth. The local cost-sharing agreement is scheduled to be completed this May, with construction to start in Fiscal Year 1987.

SAVANNAH HARBOR WIDENING, GEORGIA

The Savannah Harbor, Georgia channel will be widened from 400 to 500 feet from the present upstream limit of the existing 500-foot channel at Fig Island Turning Basin to the Kings Island Turning Basin, approximately 5.1 miles. The local cost-sharing agreement is

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scheduled to be completed this June, with construction to begin in Fiscal Year 1987.

GULFPORT HARBOR, MISSISSIPPI

Channel deepening and widening with minor relocation is required to provide a safe and efficient harbor for the present and anticipated traffic at Gulfport Harbor, Mississippi. The engineering effort will be completed in Fiscal Year 1989. A local cost-sharing agreement is being negotiated with the sponsor.

DADE COUNTY, FLORIDA, NORTH OF HAULOVER BEACH PARK

The eroded beach along the Dade County, Florida coast north of Haulover Beach Park will be restored and nourished to protect the valuable coastal development. The local cost-sharing agreement will be completed in May 1986, with construction being initiated late this year.

BUDGET YEAR PROGRAM

The budget request for the major appropriations is $404,091,000, including $10,500,000 to be derived from the Inland Waterways Trust Fund. I will highlight some of the progress and planned activities in our major appropriation categories.

GENERAL INVESTIGATIONS

We are requesting $7,381,000 to continue 22 Surveys, of which 6 will be completed during the fiscal year, and to pursue three Continuation of Planning and Engineering studies, completing one.

VALLEY CREEK, WARRIOR RIVER AND TRIBUTARIES, ALABAMA

Valley Creek, in north central Alabama, originates in Birmingham and flows southwesterly to the Black Warrior River. The upper flood plain contains about 1,600 structures subject to flooding. The Reconnaissance Report is scheduled for completion this month. The requested funds will allow completion of the feasibility study contingent on signing a cost-sharing agreement with the local sponsor.

GUANAJIBO RIVER, PUERTO RICO

Flooding continues to be a serious problem in Puerto Rico. The Guanajibo River drains about 142 square miles in the southwestern part of the island with damaging floods occurring every two to five years. This study will determine the feasibility of providing flood damage protection to the City of Mayaguez and the surrounding area. Completion is scheduled in early 1989.

ROANOKE RIVER, UPPER BASIN, VIRGINIA

The Roanoke River upper basin drainage area in southern Virginia is subject to frequent flooding, with high dollar damages. Because of the devastating flooding that occurred along major tributary streams in November 1985, unanticipated studies of those streams are being given precedence over studies in the remainder

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of the basin. The requested funds will allow completion of preliminary studies of these streams.

CONSTRUCTION, GENERAL

Our budget request for construction is $170,505,000, including $10,500,000 to be derived from the Inland Waterways Trust Fund. This amount allows progress on 24 projects, including initial construction on four projects. Scheduled work will be completed on three projects.

NEW STARTS

The new starts included in the construction request are Jacksonville Harbor (Mill Cove), Florida; Ponce Harbor, Puerto Rico, both of which are navigation; Sowashee Creek, Mississippi; and Three Mile Creek, Alabama, both of which are flood control projects. On all proposed new starts, local sponsors have indicated a willingness to provide the items of local cooperation. I will highlight two of these new starts.

PONCE HARBOR, PUERTO RICO

The municipality of Ponce is the central distribution point for the southern region of Puerto Rico. The harbor channels and turning basins will be improved to accommodate larger ships.

SOWASHEE CREEK, MERIDIAN, MISSISSIPPI

Sowashee Creek flooding continues to be a problem for the City of Meridian, Mississippi. Plans will be completed for channel modification to reduce flood damages to the commercial and industrial urban area.

CONTINUING CONSTRUCTION

In addition to the new starts, our budget request will allow progress on 20 continuing construction projects.

RICHARD B. RUSSELL DAM AND LAKE, GEORGIA AND SOUTH CAROLINA

At this time last year, commercial power was being produced by two conventional units at the Richard B. Russell, Georgia and South Carolina project, with construction underway on two other units. We now have power on line at all four conventional units. The project was dedicated in September 1985. Construction is continuing on the pumped-storage units.

PORTUGUES AND BUCANA RIVERS, PUERTO RICO

The concrete- and stone-lined channel work on the Portugues and Bucana Rivers project in Puerto Rico is nearing completion. Flood damages prevented by these partially completed channels from heavy rains caused by Hurricane Isabel in May 1985 are estimated at $25 million. The Cerrillos Dam was undergoing site preparation last year. Hurricane Isabel slowed that construction work, but progress is again underway. The rains caused a landslide at the

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Intake Tunnel area. The contractor is removing this debris, at an added cost of $5 million.

TENNESSEE-TOMBIGEE WATERWAY, ALABAMA AND MISSISSIPPI

COMMERCE

Although the Budget request does not include funds for the Tennessee-Tombigbee Waterway project, construction of navigation related facilities is continuing with funds previously made available to the Corps. As reported last year, the waterway was opened to navigation with the transit of the first commercial tow in January 1985. From January through December 1985, 367 tows have moved along the waterway. The primary commodities thus far have been coal, stone and petroleum products. During its first year of operation, almost 2 million tons of cargo have been moved.

PORTS

Last year, we reported in some detail on the commercial development along the waterway. Port development is continuing with construction now underway or complete on 16 cargo handling facilities and four marinas.

OPERATION AND MAINTENANCE

The last and largest category of our program request is Operation and Maintenance. We are seeking $226,205,000 to ensure that completed projects remain functional.

NAVIGATION

We maintain 29 major harbors of 25 feet or greater depth. We also maintain either annually or periodically, 110 lesser harbor and channel projects, and 3,800 miles of inland waterway with 35 locks and dams.

FLOOD CONTROL

Our four flood control reservoirs prevented flood damages in excess of $150 million last year.

MULTIPLE-PURPOSE

The 14 multiple-purpose projects which we operate and maintain contribute greatly to the nation's energy needs. In 1985, our projects produced 3.4 billion kilowatt hours of electrical power that sold for $64 million. This energy is the equivalent of 6.1 million barrels of oil.

DROUGHT

Even though the Division area is experiencing record floods and hurricanes, the lake levels around the Atlanta area are below normal for this time of year. We are approaching drought conditions.

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RECREATION

Recreation at the lakes created by our projects provides a vital need to the well-being of the nation. Each year, more than 105 million visitors enjoy our lakes. Seven of the ten most visited lakes in the nation are in our area, including the one most popular, Lake Lanier, with over 16 million visits last year.

CONCLUSION

We, in the South Atlantic Division, continue to pursue vigorously our Civil Works program. I look forward to working with you and your committee in the months ahead in addressing and helping to resolve the water resources needs in the Southeast.

Mr. Chairman, that concludes my status report. I would be pleased to answer any questions you may have.

Mr. BEVILL. A very fine statement, General.

JUSTIFICATION SHEETS

We will insert the justification material for the South Atlantic Division in the record at this point, without objection.

[The justifications follow:]

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Justification of Estimates for Civil Functions Activities
Department of the Army, Corps of Engineers
Fiscal Year 1987
SUMMARY SOUTH ATLANTIC DIVISION

General Investigations	F.Y. 1986 Allocations $	F.Y. 1987 Request $	Increase or Decrease $
Surveys Including Phase I Stage of AE&D	5,517,000	6,561,000	1,044,000
Continuation of Planning and Engineering	1,815,000	820,000	-995,000
Advance Engineering and Design	450,000	0	-450,000
Construction, General			
Construction	115,113,000 2/	170,505,000 3/	55,392,000
Operation and Maintenance, General			
Project Operation and Maintenance	210,000,000	226,205,000	16,205,000
Total	332,895,000 1/	404,091,000	71,196,000

1/ Does not reflect reductions required by the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177).

2/ Includes $1,533,000 to be derived from the Inland Waterways Trust Fund.

3/ Includes $10,500,000 to be derived from the Inland Waterways Trust Fund.

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JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: General Investigations, FY 1987 — South Atlantic Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

1. Surveys - New - None

2. Surveys - Continuing

a. Navigation Studies: The amount of $1,035,000 is requested for the completion of one study and the continuation of four studies during Fiscal Year 1987.

Alabama

Bayou La Batre	269,000	105,000	104,000	50,000	0

Bayou La Batre is a tidal stream about ten miles long which empties into Mississippi Sound about 30 miles southwest of Mobile, Alabama. The bayou's adjacent streambanks have been extensively developed to serve a large commercial fishing fleet; boat building and repair facilities; and other marine-based service facilities. There is an existing Federal navigation channel serving Bayou La Batre providing a 12 by 100-foot channel extending 6.3 miles upstream from Mississippi Sound. Local interests have expressed a desire for deepening and extending the current project. This study is addressing the need for further improvements based on current development and current using traffic. The study cost estimate has increased $71,000 for modeling and analysis necessary to assess impacts associated with open water deposition of dredged materials.

Fiscal Year 1985 funds were used to complete the reconnaissance phase, and initiate the feasibility phase at Federal expense upon agreement by the local sponsor to share 50 percent of the costs of the feasibility phase after cost sharing is implemented. The effective date of implementation is 15 March 1986. The feasibility phase is being continued in Fiscal Year 1986. The funds requested for Fiscal Year 1987 will be used to complete the feasibility phase of the study. The estimated cost of the feasibility phase is $343,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost	433,000
Reconnaissance Phase (Federal)	90,000
Feasibility Phase (Federal)	179,000
Feasibility Phase (Non-Federal)	164,000

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1985	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

The reconnaissance phase was completed in July 1985. The feasibility study is scheduled for completion in September 1987.

Florida

Port Everglades	140,000	0	45,000	50,000	45,000

Port Everglades Harbor is a deep draft Federal navigation project in Broward County, Florida. The harbor is located about 23 miles north of Miami Harbor and 48 miles south of Palm Beach Harbor. The project includes a jetty protected entrance channel 45 and 42 feet deep and a main turning basin 42 feet deep. The port area handles petroleum, general cargo, bulk cargo, containers, and cruise passengers. Local interests want to extend deep draft navigation south along the existing intracoastal waterway for access to new container terminals planned for construction. The desired work would require major deepening in an environmentally sensitive area. There is a need to investigate the impacts and desirability of this project in a comprehensive study. The study will consider the tributary area associated with the container traffic expected to use the facility, and the waterway to be impacted with the proposed improvement.

Fiscal Year 1986 funds are being used to fully fund the reconnaissance phase at full Federal expense. The funds requested for Fiscal Year 1987 will be used to initiate the feasibility phase of the study upon agreement by the local sponsor to share 50 percent of the costs of the feasibility phase. The preliminary estimated cost of the feasibility phase is $190,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$ 235,000
Reconnaissance Phase (Federal)	45,000
Feasibility Phase (Federal)	95,000
Feasibility Phase (Non-Federal)	95,000

The reconnaissance phase is scheduled for completion in September 1986. The feasibility phase is scheduled for completion in September 1988.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Georgia					
Apalachicola River "308" Report Georgia, Alabama and Florida	2,258,000	1,232,000	479,000	300,000	257,000

The Apalachicola River System with its principal tributaries, the Chattahoochee and Flint Rivers, forms a basin 380 miles long with a maximum width of 110 miles and has a drainage area of 19,800 square miles. The Apalachicola system is located in western Georgia and eastern Alabama and flows through the Florida panhandle into the Gulf of Mexico. The three Governors involved have requested that outstanding study authorities be combined, and previous reports on the area be reviewed for the purpose of developing responsible water management plans for the Apalachicola-Chattahoochee-Flint Rivers system which will consider water related needs for all users. The study includes development of a long-range drought management plan; a navigation maintenance plan which will meet the needs of the system and be cost effective and acceptable to the three states; and a long-range water budget and management strategy. Other water resource needs of the basin which will be investigated include flood control, hydropower, water supply and recreation. Funds provided in Fiscal Year 1986 are being used to continue engineering, environmental and economic investigations, public involvement and agency coordination program due to the diverse and regional nature of the various water resource problems. The funds requested for Fiscal Year 1987 will be used to formulate and evaluate solutions to the navigation, flooding, water supply, drought planning and water budgeting problems. The study report of the Division Engineer is scheduled for completion in December 1988.

Brunswick Harbor	1,370,000 1/	150,000	400,000	500,000	320,000

Brunswick Harbor is located in Glynn County, Georgia, about 75 miles south of Savannah. The Federal navigation project in Brunswick Harbor consists of approximately 13 miles of channel in St. Simons Sound, Brunswick River, and Turtle River; approximately 2 miles of channel in East River; and approximately 8 miles of channel across the ocean bar. The Georgia Ports Authority has completed a navigation channel connecting Colonel's Island with the existing Federal navigation project and constructed new terminal facilities on Colonel's Island. Cargo began moving through the Colonel's Island facilities in late 1985. The Georgia Ports Authority has also upgraded and expanded facilities in East River. In 1982, about 1.6 million tons of cargo moved through the East River Terminal. By the year 2005, it is projected that about 2.7 million tons will move through East River Terminal and 3.2 million tons will move through Colonel's Island Terminal. State and local governments desire modifications to the

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

existing Federal project particularly with respect to increasing the depths of the existing channels. Fiscal Year 1985 funds were used to complete the reconnaissance phase of the study. The feasibility phase is being initiated in Fiscal Year 1986. The funds requested for Fiscal Year 1987 will be used to continue the feasibility phase of the study. The study report of the Division Engineer is scheduled for completion in September 1988.

1/ Excludes previous study effort ($232,000) expended prior to FY 1985, of which results are no longer valid nor useful due to changed conditions and circumstances.

North Carolina

Morehead City Harbor	516,000	0	200,000	125,000	191,000

Morehead City Harbor is a deep draft, Federal navigation project in Carteret County midway along the North Carolina coast about 10 miles northwest of Cape Lookout. The authorized and constructed project consists of an ocean bar channel 42 feet deep and 450 feet wide, a cutoff channel 40 feet deep and 600 feet wide; an inner channel 40 feet deep and 400 feet wide; and a harbor with the east leg of the turning basin being 40 feet deep, including a turning area 1,200 feet in diameter, and the west leg being 35 feet deep. The port handles phosphate rock, fertilizer, chemicals, petroleum products, sulfur, coal and general cargo. Recent increases in use of the port by deeper draft vessels and proposed use of the port facility indicate that a deeper project may be warranted. Strong interest has been expressed by shippers and the State Ports Authority in deepening the existing navigation project to handle bulk carriers which draw 45 feet of water fully laden. Preliminary studies will determine if jetties will be required at Beaufort Inlet or whether the navigation improvements could be made with a dredge maintained alternative. Jetties at the inlet were authorized in 1937 but have not been constructed. Fiscal Year 1986 funds are being used to fully fund the reconnaissance phase at full Federal expense. The funds requested for Fiscal Year 1987 will be used to initiate the feasibility phase of the study upon agreement by the local sponsor to share 50 percent of the costs of the feasibility phase. The preliminary estimated cost of the feasibility phase is $632,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$ 832,000
Reconnaissance Phase (Federal)	200,000
Feasibility Phase (Federal)	316,000
Feasibility Phase (Non-Federal)	316,000

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

The reconnaissance phase is scheduled for completion in February 1987. The feasibility phase is scheduled for completion in February 1990.

Total Navigation	4,563,000	1,497,000	1,228,000	1,035,000	813,000

b. Flood Damage Prevention: The amount of $5,476,000 is requested for the completion of four studies and the continuation of twelve studies during Fiscal Year 1987.

Alabama

Valley Creek, Warrior River & Tributaries	598,000	250,000	200,000	148,000	0

Valley Creek is located in north central Alabama and has a drainage area of 255 square miles. The stream forms in the city of Birmingham and flows southwesterly through the cities of Midfield, Roosevelt, Brighton, and Bessemer before emptying into the Black Warrior River. In the upper 18 miles of the creek there are about 1,600 structures in the 500-year flood plain, the majority of which are residential. A flood on 2 December 1983 caused more than $5,000,000 in damages along the creek. A Section 205 study completed in April 1984 indicated flood damage reduction measures could be formulated, however, tentative cost estimates showed corrective measures would exceed the limitation of a Section 205 Flood Control Project. Survey scope reconnaissance studies were conducted and found average annual flood damages along Valley Creek of $4,860,000. Flood control alternatives will be developed and investigations conducted to determine what improvements could be recommended to reduce flooding along Valley Creek. The study cost estimate has increased $116,000, of which $26,000 is for salaries and $90,000 for additional costs associated with more detailed studies during the reconnaissance phase of the study.

Fiscal Year 1985 funds were used to fully fund the reconnaissance phase at full Federal expense. The feasibility phase is being initiated in Fiscal Year 1986 upon agreement by the local sponsor to share 50 percent of the costs of the feasibility phase after cost sharing is implemented. The funds requested for Fiscal Year 1987 will be used to complete the feasibility phase of the study. The estimated cost of the feasibility phase is $696,000. A summary of study cost sharing is as follows:

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
	Total Estimated Study Cost		$ 946,000		
	Reconnaissance Phase (Federal)		250,000		
	Feasibility Phase (Federal)		348,000		
	Feasibility Phase (Non-Federal)		348,000		

The reconnaissance phase was completed in February 1986. The feasibility study is scheduled for completion in September 1987.

Florida

Coast of Florida Erosion and Storm Effects Study	5,520,000	220,000	550,000	750,000	4,000,000

The Coast of Florida Erosion and Storm Effects Study includes the entire Florida coastline consisting of three major coastal regions. The east coast of Florida region from the Florida-Georgia state line to the Florida Keys, a distance of more than 500 miles, consists of a series of sandy barrier islands broken by inlets. The peninsular Gulf Coast region from Key West Florida north to Tampa-St. Petersburg, Florida is also composed of offshore barrier islands. The Panhandle Gulf coast of Florida region extending from the Tampa-St. Petersburg, Florida area to the Alabama state line consists of sandy beaches backed by dune lines with heights ranging from 10 to 15 feet. The National Shoreline Study identified 543 miles of Florida's shoreline as having erosion problems. The State of Florida continues to experience erosion along its beaches. Apparent causes of the erosion include storms, maintained navigation projects, urban development and rising sea level. The Florida population of 10.6 million is expected to increase to 14.8 million by the year 2000 with concentrated increases in the coastal and barrier islands area. The study efforts will be directed toward achieving the overall goal of identifying, quantifying, documenting and understanding coastal changes and processes for these three regions. The study will evaluate the impact of the existing Federal projects including harbors, inlets and beach erosion control projects on the coastal processes. The basic objective of the study is to provide a comprehensive body of information on which to base formulation, design, operation and maintenance of coastal and urban flood protection measures and management plans. The study cost estimate has decreased $30,000 due to the completion of the reconnaissance phase for less than the original estimate.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

Fiscal Year 1985 funds were used to fully fund the reconnaissance phase at full Federal expense. The feasibility phase of the study is being initiated in Fiscal Year 1986 upon agreement by the local sponsor to share 50 percent of the costs of the feasibility phase after cost sharing is implemented. The funds requested for Fiscal Year 1987 will be used to continue the feasibility phase of the study. The estimated cost of the feasibility phase is $13,700,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$13,920,000
Reconnaissance Phase (Federal)	220,000
Feasibility Phase (Federal)	5,300,000
Feasibility Phase (Non-Federal)	8,400,000

The reconnaissance phase was completed in February 1986. The feasibility phase is scheduled for completion in September 1992.

St. Marys River Basin, Florida and Georgia	1,075,000	600,000	100,000	250,000	125,000

The St. Mary's River, located in southeastern Georgia and northeastern Florida, rises in the Okefenokee Swamp in Charlton and Ware Counties, Georgia, at an elevation between 110 and 120 feet. It flows circuitously eastward about 125 river miles, forming part of the boundary between the two states, and empties into the Atlantic Ocean through Cumberland Sound. The St. Marys River Basin is bounded on the north by the Satilla River Basin, on the west and south by the Suwannee River Basin, and on the south and east by the Nassau and St. Johns River Basins. The area of the watershed is approximately 1,500 square miles excluding the Okefenokee Swamp. The development of the Navy's Kings Bay Submarine Support Base, in addition to the normal development in the area, has increased the need for a comprehensive study of the St. Marys River Basin. The results of this study will include a comprehensive analysis of the water and related land use resources of the Basin area. The study output will include traditional Corps structural and nonstructural solutions. The study cost estimate has decreased $498,000 due to a reanalysis of study requirements based on the reconnaissance report.

Fiscal Year 1985 funds were used to initiate the feasibility phase at Federal expense upon agreement by the local sponsor to share 50 percent of the costs of the feasibility phase after cost sharing is implemented. The

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

effective date of implementation is 15 March 1986. The feasibility phase is being continued in Fiscal Year 1986, including hydrologic and hydraulic studies and field surveys. The funds requested for Fiscal Year 1987 will be used to continue hydrologic and hydraulic studies and field surveys. The estimated cost of the feasibility phase is $1,350,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$1,550,000
Reconnaissance Phase (Federal)	200,000
Feasibility Phase (Federal)	875,000
Feasibility Phase (Non-Federal)	475,000

The reconnaissance phase was completed in October 1984. The feasibility study is scheduled for completion in September 1988.

Georgia

Northeast Georgia Region	1,541,000	1,032,000	250,000	259,000	0

The Northeast Georgia Region study area includes Barrow, Clarke, Elbert, Greene, Jackson, Madison, Morgan, Newton, Oconee, Oglethorpe, and Walton Counties. The northeast Georgia area is currently the second fastest growing region in Georgia. The planning area lies among parts of three major river basins - the Altamaha, Ogeechee, and Savannah. Because of the rapid growth of the region, partially due to the influence of Metropolitan Atlanta's area growth, local governments are experiencing difficulties in providing adequate facilities for wastewater treatment, water supply, high water quality, drainage, flood damage prevention, and recreation. Athens, Georgia is the commercial and industrial hub of the area. The majority of workers in neighboring counties are employed in Clarke County. Growth has been stimulated recently along the western edge of the region due to the new industries moving into Barrow County and home developments in Walton County for Atlanta area workers. Other counties are on the verge of expansion if water and sewer problems can be solved. Population for the region is expected to increase from a 1980 total of 229,000 to an estimated 376,000 by the year 2010. Water supply is critical in this region due to the lack of ground water as well as insufficient surface water in many areas. State and local governments desire that a comprehensive water resources management plan be developed to assist them in planning facilities to meet both short and long range municipal and industrial water needs. This study will provide needed plans for managing the area's water and related resources and would also give the state much needed data to allocate surface and ground water supplies and assign wastewater discharge allocations. The study cost

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

estimate has increased $155,000 based on a reanalysis of study requirements which included the addition of Newton County to the study area and the requirement to increase the number of water supply alternatives included in the plan formulation process. Water resources management alternatives which include institutional and implementation evaluations, hydrologic, design and cost benefit studies, and socio-economic and environmental assessments are being formulated in Fiscal Year 1986. The funds requested for Fiscal Year 1987 will be used to complete the feasibility phase of the study. The study report of the Division Engineer is scheduled for completion in September 1987.

Savannah River Basin	950,000 1/	300,000	100,000	210,000	340,000

The Savannah River Basin comprises about 11,000 square miles in Georgia, South Carolina, and North Carolina. The basin extends from the Blue Ridge Mountains in North Carolina to the Atlantic Ocean at Savannah, Georgia. The area is predominately rural with scattered urban and industrial areas. Rapid industrial expansion in and adjacent to the basin is generating greater needs for industrial and domestic water supply, navigation, drainage, flood control, recreation, fish and wildlife enhancement, hydroelectric power, and related water uses. The local sponsors are the Georgia Environmental Protection Division, the State of South Carolina Water Resources Commission and Richmond County, Georgia. All have stressed the vital importance in planning for the efficient and effective use of available water resources in the Savannah River Basin. The needs assessment for water supply indicated the predicted demand for water could be met by using the remaining contractable water supply storage at the three Corps lakes - Hartwell, Richard B. Russell, and Clarks Hill. However, water resources needs within the basin could be enhanced by developing a comprehensive water management plan. There is also a need to address flood control reduction measures in Augusta, Georgia.

The feasibility phase is being initiated in Fiscal Year 1986 upon agreement with the local sponsor to share 50 percent of the cost of the feasibility phase after cost sharing is implemented. The funds requested for Fiscal Year 1987 will be used to continue the feasibility phase of the study. The estimated cost of the feasibility phase is $1,300,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$1,600,000
Reconnaissance Phase (Federal)	300,000
Feasibility Phase (Federal)	650,000
Feasibility Phase (Non-Federal)	650,000

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

The reconnaissance phase was completed in January 1986. The feasibility study is scheduled for completion in September 1989.

1/ Excludes previous study effort ($935,000) expended prior to FY 1985 of which results are neither valid nor useful due to changed conditions and circumstances requiring a basic reevaluation.

Turkey Creek	334,000	0	150,000	100,000	84,000

Turkey Creek is located in central Georgia in Wilkinson and Laurens Counties which are contiguous to the Macon, Georgia, Metropolitan Statistical Area (MSA). With the exception of Dublin, Georgia, in Laurens County, the area is primarily rural with agriculture being the dominant industry. Agricultural interests in the area have suffered severe hardships for the past three to five years due to prolonged drought conditions. Because of lack of surface water, these interests are drilling an increasing number of wells to obtain irrigation water. The area is underlain by numerous limestone caverns and they fear heavy groundwater withdrawals will cause ground subsidence. Portions of Wilkinson and Laurens Counties are located in the recharge area of the Ocala limestone, the principal aquifer of southeast Georgia and northern Florida. The purpose of the study is to review previous reports and, determine if modifications of recommendations in regard to providing a plan for development, utilization, and conservation of water and related land resources are desirable. The study will also evaluate the feasibility of a traditional dam and reservoir on Turkey Creek which would provide for flood control, water supply and serve associated water needs. Two sites in the National Hydropower Study (Dublin and Toomsboro) will be evaluated.

Fiscal Year 1986 funds are being used to fully fund the reconnaissance phase at full Federal expense. The funds requested for Fiscal Year 1987 will be used to initiate the feasibility phase of the study upon agreement by the local sponsor to share 50 percent of the costs of the feasibility phase. The preliminary estimated cost of the feasibility phase is $368,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$518,000
Reconnaissance Phase (Federal)	150,000
Feasibility Phase (Federal)	184,000
Feasibility Phase (Non-Federal)	184,000

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

The reconnaissance phase is scheduled for completion in December 1985. The feasibility phase is scheduled for completion in September 1988.

Mississippi

Mississippi Gulf Coastal Areas	860,000	300,000	200,000	215,000	145,000

The study area encompasses Hancock, Harrison, and Jackson Counties, Mississippi, all of which border the Gulf of Mexico. Local interests are concerned about the potable water supply in the area, navigation needs on the Pascagoula and Escatawpa Rivers in Jackson County and beach erosion in Hancock County. Recently completed reconnaissance studies found that water supply could only be addressed as a single purpose project. Therefore, there is no Federal interest in continuing these studies and water supply has been deleted from feasibility phase studies. The reconnaissance studies did find favorable project economics for beach erosion control and navigation improvements, indicating further studies of these needs are warranted. The study cost estimate decreased $640,000 due to increases of $310,000 for the addition of navigation studies, offset by a decrease of $950,000 for the elimination of water supply studies.

The feasibility phase is being initiated in Fiscal Year 1986 upon agreement with the local sponsor to share 50 percent of the costs of the feasibility phase after cost sharing is implemented. The effective date of implementation is 15 March 1986. The funds requested for Fiscal Year 1987 will be used to continue feasibility phase of the study. The estimated cost of the feasibility phase is $1,120,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$1,420,000
Reconnaissance Phase (Federal)	300,000
Feasibility Phase (Federal)	560,000
Feasibility Phase (Non-Federal)	560,000

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

The reconnaissance phase was completed in December 1985. The feasibility study is scheduled for completion in September 1988.

Tombigbee River and Tributaries	3,440,000	682,000	200,000	990,000	1,568,000

The Tombigbee River originates in northeastern Mississippi at the confluence of Big Brown and Mackeys Creeks in Itawamba County, Mississippi. The river basin has a drainage area of about 20,100 square miles, is about 240 miles long, and varies up to 160 miles wide. The study is concerned primarily with flood control, water supply, recreation, and related water resources development needs. Substantial damages occur in the rural areas throughout the basin. A recurrence of the March 1973 flood in the Tombigbee River Basin would cause flood damages in excess of $31,865,000 based on 1985 price levels and development. Water supply problems will occur in the basin by the year 2000 as the water table continues to fall. In addition, erosion and bank sloughing problems due to head cutting and stream deterioration have been identified in the basin. The study cost estimate was increased $600,000 for additional study coordination and the addition of water supply planning. Fiscal Year 1986 funds are being used to define the magnitude and extent of erosion and sedimentation, define the need for detailed surveys and engineering investigations and identify economic and environmental improvements to be evaluated. The funds requested for Fiscal Year 1987 will be used to continue defining the magnitude and extent of erosion and sedimentation, begin detailed surveys and engineering and economic investigations and evaluate environmental impacts of alternative plans. The study report of the Division Engineer is scheduled for completion in March 1990.

North Carolina

Eastern North Carolina Above Cape Lookout	1,582,000	378,000	355,000	460,000	389,000

The 5,800 square mile study area includes 17 counties surrounding Pamlico and Albemarle Sounds, six ocean inlets, and a large segment of the Atlantic Intracoastal Waterway which bisects the study area. Three major rivers (the Roanoke, Pamlico, and Neuse) and numerous smaller tributaries empty into the sounds. More than half of

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

the study area is subject to flooding from wind tides and local runoff. Flood damages were $6,600,000 from Hurricane Hazel in 1954 and $37,400,000 from Hurricanes Connie, Diane, and Ione in 1955. Earlier studies looked at the feasibility of flood control measures, determined irrigation water needs, and inventoried surface and ground water supplies as a basis for identifying water quality problems. The study was placed in deferred status in 1977 due to a lack of recent expression of local interest. In recent years, vast forested areas have been cleared thereby creating the potential for adverse impacts on the biological productivity of the sounds. The State of North Carolina has become increasingly concerned over water resources problems developing in the study area and has devoted an increasing share of its resources to research and planning efforts in the area. In a letter, dated 4 May 1983, the State of North Carolina requested that this study be reactivated with the objective of developing a comprehensive water resources development plan for the region's water and related land resources. Investigations will be directed primarily in the areas of flood control, water quality, water supply, and fish and wildlife habitat studies. These areas of consideration have been identified by the state as needing immediate attention. Fiscal Year 1986 funds are being used to complete the preliminary assessments of solutions and initiate detailed engineering, economic, and environmental investigations. The funds requested for Fiscal Year 1987 will be used to continue detailed technical studies required for the feasibility study report. The study report of the Division Engineer is scheduled for completion in April 1989.

Little Pee Dee and Pee Dee Rivers, NC & SC	1,580,000	691,000	210,000	450,000	229,000

The Little Pee Dee and Pee Dee Rivers Basin is located in the states of North Carolina and South Carolina and extends northwest from the coast at Georgetown, South Carolina, into western North Carolina. The basin is about 250 miles long and varies up to 105 miles in width. The basin lies in three distinct physiographic provinces: The Blue Ridge Mountains, the Piedmont Plateau, and the Coastal Plain. A Level B study published in 1981 identified significant needs throughout the Pee Dee River Basin that warrant further study. The objective of the study is to make a detailed determination of the needs and solutions with particular reference to maximum utilization of water resources in the basin; provide flood protection on the Little Pee Dee River and its tributaries; and the provision of flood control, water supply, hydroelectric power, and allied purposes in North Carolina, including a detailed study of multipurpose reservoir sites on the Rocky River. Fiscal Year 1986 funds are being used to continue detailed engineering, economic, recreation, geologic, and environmental studies to refine the most promising reservoir sites in the Rocky River subbasin. The funds requested for Fiscal Year 1987 will be used to continue detailed feasibility studies and narrow the alternatives being considered to those best able to meet most of the basin water resource needs. The study report of the Division Engineer is scheduled for completion in March 1989.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1985	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Neuse River	2,963,000	1,467,000	225,000	465,000	806,000

The Neuse River Basin, located in eastern North Carolina, has a drainage area of about 5,700 square miles and a 1980 population of 1,179,600. The basin is approximately 180 miles long and varies up to 45 miles in width. The Neuse is formed by the confluence of the Eno and Flat Rivers. Major tributaries are the Little and Trent Rivers and Contentnea Creek. Flood damages occur annually throughout the basin. Most of the flood damages occur on the broad flood plains of the Neuse within the major urban areas of Goldsboro and Kinston, North Carolina, and to agricultural property and crops in these areas. A recurrence of the October 1964 flood in the Neuse River Basin would cause losses in excess of $22,000,000 based on 1985 price levels and development. The previous study of the Neuse River Basin was completed in 1965 and published as House Document 175, 89th Congress, 1st Session. The report presented a long range, basinwide, water resources development plan consisting essentially of 13 multiple-purpose reservoir projects. The report also served as the authorizing document for the Falls Lake project which controls about 38 percent of the drainage area in the basin and which will reduce basinwide average annual flood damages by about 38 percent. Local interests desire further investigation of several aspects of water resources development including water supply, water quality, and evaluation of flood control measures. The basinwide study being conducted in 1977 was deferred at the request of the North Carolina Department of Natural Resources and Community Development, pending completion of the USDA-State of North Carolina Tar-Neuse Basin study which was completed in December 1980. The State of North Carolina and local interest groups expressed a strong interest in resuming the Corps' study to review and update the water resources needs in the basin with specific emphasis on urban flood control, municipal and industrial water supply, water quality, and hydropower. All water resources needs within the basin will be investigated with a view toward developing a comprehensive water management plan. Fiscal Year 1986 funds are being used to continue studies of the multipurpose reservoir site and to initiate detailed flood damage prevention studies in the Wilson and Kinston, North Carolina areas. The funds requested for Fiscal Year 1987 will be used to complete studies for the Buckhorn Lake site, continue studies for the Wilson and Kinston, North Carolina areas, and initiate studies for adding hydroelectric power to the existing Falls Lake Project. The study report of the Division Engineer is scheduled for completion in July 1989.

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Puerto Rico					
Arecibo River	370,000	0	75,000	100,000	195,000

The Arecibo basin is located in the north-central region of Puerto Rico about 45 miles west of San Juan. The City of Arecibo has a population of 90,000, most of it concentrated along the Arecibo River. The City of Arecibo is located generally in the flood plain along the river at the coast. The Arecibo basin has experienced numerous flood events over the years. The greatest known flood occurred in 1899. The most recent flooding was in 1985 and resulted in damages in excess of $6 million. In addition to quantifiable damages, severe disruption of transportation and socio-economic activities accompany each significant flooding. Magnitude of known flooding problems in this basin clearly indicates the need for a feasibility study.

Fiscal Year 1986 funds are being used to fully fund the reconnaissance phase at full Federal expense. The funds requested for Fiscal Year 1987 will be used to initiate the feasibility phase of the study upon agreement by the local sponsor to share 50 percent of the costs of the feasibility phase. The preliminary estimated cost of the feasibility phase is $590,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$ 665,000
Reconnaissance Phase (Federal)	75,000
Feasibility Phase (Federal)	295,000
Feasibility Phase (Non-Federal)	295,000

The reconnaissance phase is scheduled for completion in September 1986. The feasibility phase is scheduled for completion in November 1989.

Guanajibo River	884,000	162,000	185,000	255,000	282,000

The Guanajibo River is located in the southwestern part of Puerto Rico, draining westward from the Cordillera Central to the Caribbean Sea at Mona Passage. The drainage area is about 142 square miles and had a 1980 population of 204,000. Considerable flooding occurred in the study area in 1958, 1960, 1963, 1968 and 1975. The 1975 floods were the most extensive during the passage of tropical storm Eloise. The basin includes portions of

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

the Municipalities of Mayaguez, Cabo Rojo, Hormigueros, San German, Maricao and Sabana Grande. Part of the City of Mayaguez, largest population and economic center of western Puerto Rico lies in the study area. Studies are being conducted to determine the feasibility of providing flood damage protection to the City of Mayaguez and the towns of Cabo Rojo, Hormigueros and San German. Included are studies for development of a multiple purpose reservoir site which could supplement the water supply needs of southwestern Puerto Rico. Fiscal Year 1986 funds are being used to continue ongoing studies and collect field data. The funds requested for Fiscal Year 1987 will be used to continue ongoing studies and initiate foundation investigations. The study report to the Division Engineer is scheduled for completion in March 1989.

Rio Grande de Loiza River and Tributaries	911,000	543,000	160,000	208,000	0

The Rio Grande de Loiza Basin is located in the eastern central part of the island and flows north into the Atlantic Ocean. The total basin area covers about 310 square miles. The 1980 population of the study area was about 514,000 which includes approximately 20 percent of the population of the San Juan Metropolitan area. The municipalities of Caguas, Canovanas, Carolina, Gurabo, Juncos, Loiza, San Lorenzo, Trujillo Alto, and portions of Aguas Buenas and Rio Grande are included in the basin. Major floods in the basin occurred in 1960, 1961, 1975, and 1979. Local interests desire a study of potential measures for urban flood protection and improvement of municipal and industrial water supply. The area currently provides about 60 percent of the present water requirements of the San Juan Metropolitan Area. An evaluation of potential storage sites has been completed. Fiscal Year 1986 funds are being used to continue ongoing studies and initiate refinement of flood damage and water supply alternatives. The funds requested for Fiscal Year 1987 will be used to complete the feasibility phase of the study. The study report of the Division Engineer is scheduled for completion in November 1987.

South Carolina

Gills Creek	1,824,000	1,298,000	410,000	116,000	0

The study area is located in Richland County lying in the eastern part of the Columbia metropolitan area and the western part of Fort Jackson Military Reservation. It has a drainage area of 73 square miles. The problem is primarily flooding of residences and industrial development within the city limits of Columbia. Numerous non-Federal dams that have been designated unsafe due to inadequate spillways, exist along Gills creek. The flood plain

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

around and below these dams is extensively developed creating a high potential for loss of life. Preliminary investigations indicate that significant flood damages would occur if a severe storm were to develop in the area and cause the dams to be overtopped. Normal stream flooding causes damage in the upper and lower reaches of the watershed where encroachment has placed numerous buildings in the flood plain. The study will determine the feasibility of alternative corrective measures available with respect to solving the flooding problems and will also investigate the water quality and water supply problems in the basin. Fiscal Year 1986 funds are being used to complete flood control, water supply and water quality alternative studies and formulate both structural and non-structural measures that could be implemented to provide the most feasible solutions for basin water resource problems. The funds requested for Fiscal Year 1987 will be used to complete the feasibility phase of the study. The study report of the Division Engineer is scheduled for completion in August 1987.

Virginia

Roanoke River, Upper Basin	3,110,000	1,872,000	130,000	500,000	608,000

This is a review of HD 650/78/2 limited to the upper portion of the Roanoke River Basin above the John H. Kerr Dam and Reservoir project but excluding the Dan River Basin. The upper basin has a drainage area of 2,820 square miles and a 1980 population of 362,200. Floods stemming from Hurricane Agnes caused $15 million in flood damages in 1972 and floods of similar magnitude occurred in 1940 and in 1978. Flooding caused by Hurricane Juan in November 1985 produced the flood of record for the Roanoke area, resulting in about $300 million of damages and 5 fatalities. The objective of the study is to formulate a plan that will best meet the water resources problems and needs of the upper basin. Earlier evaluations concentrated on the now completed interim study of the 512 square mile drainage area above the headwaters of Smith Mountain Lake, where flood problems and water supply problems of the Roanoke-Salem metropolitan area were most urgent. Continuing studies were planned for the area between the headwaters of Smith Mountain Lake and the John H. Kerr Dam and Reservoir project. Because of the devastating flooding that occurred along tributary streams in November 1985, unanticipated studies of these tributary streams are now being given precedence over studies in the remainder of the basin. At the request of local governments, studies of major tributary streams in the Roanoke-Salem area were begun in December 1985. The effects of the additional studies for tributary streams on the study cost estimate and completion date for the basin study report will be determined after preliminary evaluations of the tributary streams are completed. The study cost estimate

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

has increased $210,000, of which $155,000 is for the increased cost of subsurface investigations and economic studies and $45,000 is for salary increases. Fiscal Year 1986 funds are being used to initiate preliminary studies of major tributary streams in the Roanoke-Salem area. The funds requested for Fiscal Year 1987 will be used to complete the preliminary studies of major tributary streams. If results of preliminary studies dictate, reconnaissance phase efforts will be undertaken as new starts under the two phase process. The basin study report of the Division Engineer is scheduled to be completed in May 1990.

Total, Flood Damage Prevention	27,542,000	9,795,000	3,500,000	5,476,000	8,771,000

c. Shoreline Protection - None

d. Special Studies - None

e. Comprehensive Basin Studies - None

f. Project Review Studies - The amount of $50,000 is requested for completion of one study during Fiscal Year 1987.

FLORIDA

Hudson River	100,000	0	50,000	50,000	0

Hudson River is a Federally authorized but unconstructed project in Pasco County, which would provide a channel from Hudson River to deeper water in the Gulf of Mexico. The navigation improvement would benefit both the commercial fishing fleet, and local and countywide recreation boaters. Previous studies indicated that improvements could not be economically justified. Recently due to a significant growth in both commercial and recreational fleets, there is a good possibility that a viable plan could be developed. Results of a Section 107 appraisal report conducted to evaluate project potential for several Pasco County small boat channels showed that improvements for the Hudson River could be economically feasible.

Fiscal Year 1986 funds are being used to fully fund the reconnaissance phase at full Federal expense. The funds requested for Fiscal Year 1987 will be used to initiate and complete the feasibility phase of the study upon agreement by the local sponsor to share 50 percent of the costs of the feasibility phase. The preliminary estimated cost of the feasibility phase is $100,000. A summary of study cost sharing is as follows:

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
		Total Estimated Study Cost	150,000		
		Reconnaissance Phase (Federal)	50,000		
		Feasibility Phase (Federal)	50,000		
		Feasibility Phase (Non-Federal)	50,000		

The reconnaissance phase is scheduled for completion in September 1986. The feasibility phase is scheduled for completion in September 1987.

Total, Project Review Studies	100,000	0	50,000	50,000	0
Total Surveys - Continuing	32,205,000	11,282,000	4,778,000	5,561,000	9,584,000

3. Surveys - Continuation of Planning and Engineering Studies

a. Navigation Studies: The amount of $340,000 is requested for the completion of one study and the continuation of one study during Fiscal Year 1987.

Florida

Ft. Pierce Harbor	200,000	20,000	90,000	90,000	0

Ft. Pierce Harbor is located on the east coast of Florida 29 miles south of Sebastin Inlet and 21 miles north of St. Lucie Inlet. The recommended plan includes a channel 30 feet deep and 400 feet wide extending from the open ocean to within the existing jetties, and 28 feet deep and 250 feet wide from that point to the existing turning basin. The project would also include expansion of the existing turning basin to 1,100 feet square at 28 feet of depth, and provide an additional basin 1,250 feet by 250 feet and 28 feet of depth located immediately north of the existing terminal area. The October 1985 estimated project cost is $6,155,000. Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $5,000; pay 25 percent of the costs allocated to deep draft navigation during construction, presently estimated at $1,538,000; and pay an additional 10 percent of the costs allocated to deep draft navigation within a period of 30 years following completion if not offset by credit allowed by the Secretary of the Army. The estimated average annual benefits are $1,146,000 and the benefit cost ratio is 3.6 to 1 at 8 5/8 percent interest rate. FY 1986 funds are being used to initiate technical engineering studies. The funds requested for Fiscal Year 1987 will be used to complete technical engineering studies. This continuation of planning and engineering effort is scheduled for completion in September 1987.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
North Carolina					
Wilmington Harbor - Northeast Cape Fear River	409,000	0	0	250,000	159,000

Wilmington Harbor is located at Wilmington on the southern coast of North Carolina in New Hanover and Brunswick Counties. The plan of improvement for the existing deep draft navigation project includes: widening the 38'x 400' Fourth East Jetty Channel (about 1.5 miles long) to 500'; deepening the 32'x 400' channel between Castle Street and the NC 133 Bridge (about 1.7 miles) to 35'; deepening and widening the 32'x 1,000'x 800' turning basin just above the mouth of the Northeast Cape Fear River to 35'x 1,000'x 900'; and environmental improvements to include acquiring, by easements or fee title, about 2,800 acres of wetlands, river bluffs, and ecotones and provision for a minimum number of specially designed corridors across the wetlands for industrial access to the river. The October 1985 estimated project cost is $10,188,000. Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $390,000; bear all costs of operation, maintenance and replacement of fish and wildlife facilities presently estimated at $51,000 annually; pay 25 percent of the costs allocated to deep draft navigation during construction, presently estimated at $1,324,000; and pay an additional 10 percent of the costs allocated to deep draft navigation within a period of 30 years following completion if not offset by credit allowed by the Secretary of the Army. The estimated average annual benefits are $1,246,000 and the benefit to cost ratio is 2.3 to 1 at 8 5/8 percent interest rate. The funds requested for Fiscal Year 1987 will be used to initiate technical engineering studies. This continuation of planning and engineering effort is scheduled for completion in July 1988.

Total, Navigation	609,000	20,000	90,000	340,000	159,000

b. Flood Damage Prevention: The amount of $480,000 is requested for the continuation of one study during Fiscal Year 1987.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Virginia					
Roanoke River Upper Basin, Headwaters Area	900,000	0	360,000	480,000	60,000

The proposed flood control project is located on the Roanoke River in the City of Roanoke, Virginia. The recommended plan includes about 10 miles of channel widening through the City of Roanoke. Channel widening will be accomplished with the construction of a benched channel above the elevation of the average streamflow. Other flood damage reduction features include floodproofing at two locations, training walls to prevent floodwater intrusion into low areas along the river (total length 6550 feet), replacement of two low-level bridges which constrict streamflows, and a flood warning system. Recreation facilities consist of a nine-mile multipurpose trail along the project reach and access, and parking areas. The recommended plan would reduce average annual flood damages in the Roanoke area by about 50 percent. The October 1985 estimated project cost is $21,500,000. Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate majority leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $4,850,000; modify or relocate buildings, utilities, roads and other facilities, where necessary in the construction of the project; presently estimated at $1,550,000; pay 5 percent in cash of the total cost allocated to flood control features during project contstruction, presently estimated at $705,000; bear all costs of operation, maintenance and replacement of flood control facilities, presently estimated at $83,000 annually; pay 50 percent of the costs allocated to recreation, presently estimated at $500,000; and bear all costs of operation, maintenance and replacement of recreation facilities, presently estimated at $4,000 annually. The estimated average annual benefits are $2,783,000 and the benefit to cost ratio is 1.4 to 1 at 8 5/8 percent interest rate. Fiscal Year 1986 funds are being used to initiate technical engineering studies. The funds requested for Fiscal Year 1987 will be used to continue technical engineering studies. This continuation of planning and engineering effort is scheduled for completion in December 1987.

Total, Flood Damage Prevention	900,000	0	360,000	480,000	60,000

c. Shoreline Protection Studies - None

d. Special Studies - None

e. Comprehensive Studies - None

f. Project Review Studies - None

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
Total, Surveys - Continuation of Planning and Engineering	1,509,000	20,000	450,000	820,000	219,000
4. Phase I Stage of Advance Engineering and Design - New - None					
5. Phase I Stage of Advance Engineering and Design - Continuing - None					
6. Phase I Stage of Advance Engineering and Design - Continuation of Planning & Engineering Studies - None					
Grand Total - Surveys and Phase I Stage of Advance Engineering and Design:	33,714,000	11,302,000	5,228,000	7,381,000	9,803,000

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APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Jacksonville Harbor, Florida, Mill Cove (New)

LOCATION: Mill Cove is a shallow body of water about 5.5 miles long and 0.5 to 2.0 miles wide on the St. Johns River approximately 10 miles from the Atlantic Coast.

AUTHORIZATION: Not authorized; implementation is contingent upon enactment of pending legislation to authorize construction.

BENEFIT-COST RATIO: The benefit-cost ratio is 1.8 to 1 at 8 5/8 percent. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost (C of E)
Estimated Federal Cost	$4,000,000	
Estimated Non-Federal Cost	0	
Total Estimated Project Cost	$4,000,000	
Allocations to 30 September 1985	0	
Conference Allowance for FY 1986	0	
Allocation for FY 1986	0	
Allocations to Date	0	0
Allocation Requested for FY 1987	2,000,000	50
Scheduled Balance to Complete After FY 1987	2,000,000	
Unscheduled Balance to Complete After FY 1987	0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Flow & Circulation Cut	0	Mar 1988
Enlarge Weir	0	Mar 1988
Entire Project	0	Mar 1988

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Division: South Atlantic

District: Jacksonville

Region: South Atlantic-Gulf
Jacksonville Harbor, Florida, Mill Cove

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PHYSICAL DATA

Mill Cove: Excavate flow channel at west end to 650 feet by 3,600 feet to -12 feet MSL. Enlarge eastern opening to 1,300 feet and extend existing rock weir control structure.

JUSTIFICATION: The continued development of the Jacksonville Harbor navigation project in the St. Johns River has decreased the amount of flow in the Mill Cove area. The Dames Point-Fulton Cutoff further isolated this area. By 1974 most of the deeper channels (over 6 feet) had filled with sediment and the sedimentation expanded to the shallow areas.

FISCAL YEAR 1987: The requested amount will be applied as follows:

Initiate construction	$ 1,650,000
Engineering & Design	250,000
Supervision & Administration	100,000
TOTAL	$ 2,000,000

NON-FEDERAL COST: None required. The Jacksonville Harbor, Mill Cove, Florida project is designed to mitigate the adverse flow conditions caused by the Jacksonville Harbor project and is justified as a Federally funded activity and will not require a cost-sharing agreement.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineer) cost estimate is $4,000,000 including an allowance for inflation from 1 October 1985 through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: An EIS was filed on August 14, 1981.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in Fiscal Year 1973.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Jacksonville

Project: Jacksonville Harbor, Florida, Mill Cove

Item	Estimates Presented to Congress ($1,00) Original Baseline	Cummulative Changes	Last	Incremental Change	Current
Federal Cost (Price Level)	4,000 1/ (Oct 85)				4,000 1/ (Oct 85)
Reason for Change					
a. Price Escalation		0		0	
b. Design Changes		0		0	
c. Additional Functions Added Under General Authority		0		0	
d. Authorized Modifications		0		0	
e. Post-Contract Award and Other Estimating Adjustments		0		0	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		0	

NOTE 1/ Includes $100 allowance for estimated inflation from 1 October 1985 through the construction period.

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REPORTS CONTROL SYMBOL DAEN-CWB-E

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Channels & Harbors (Navigation Project)

SUMMARY CONSTRUCTION PROGRAM (PB 1)

FISCAL YEARS 19 86 AND 19 87

LINE NO.	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Channels & Canals	2,645,000	-	-	1,290,000	1,355,000
2	Breakwaters & Seawalls	800,000	-	-	360,000	440,000
3	Engineering & Design	300,000	-	-	250,000	50,000
4	Supervision & Administration	255,000	-	-	100,000	155,000
5						
6	Total Applied Cost (Fed Funds Only)	4,000,000	-	-	2,000,000	2,000,000
7	Undistributed Cost (None)					
8	Total Project Cost (Fed Funds Only)	4,000,000	-	-	2,000,000	2,000,000
9	Pending Adjustments (None)					
10	Total Cost (Fed Funds Only)	4,000,000	-	-	2,000,000	2,000,000
11	Undelivered Orders (None)					
12	Total Obligations		-	-	2,000,000	2,000,000
13						
14	Method of Financing					
15	Federal Funds					
16	Allocations	4,000,000	-	-		
17	Unobligated Carryover from Prior Year					
18	Total Funds Available for Obligation					
19	Appropriation Required				2,000,000	2,000,000
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC	SOUTH ATLANTIC-GULF	JACKSONVILLE HARBOR, FLORIDA, MILL COVE
	DISTRICT JACKSONVILLE	BASIN ST. JOHNS	

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APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Ponce Harbor, Puerto Rico (New)

LOCATION: Ponce Harbor is an open bay about midway on the south coast of Puerto Rico. The harbor is southwest of San Juan Harbor, approximately 48 miles overland across the island.

AUTHORIZATION: Authorized in 1976 under Section 201 of 1965 Flood Control Act.

BENEFIT-COST RATIO: The benefit-cost ratio is 7.0 to 1 at 8 5/8 percent. The benefit-to-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost (C of E)	STATUS (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Estimated Total Appropriation Requirement		$ 7,328,000		Channels		
Estimated Federal Cost (U. S. Coast Guard)		10,000		Main Channel &		
Future Non-Federal Reimbursement	$977,000			Turning Basin	0	Mar 1988
Estimated Federal Cost (Ultimate)		6,361,000				
Estimated Non-Federal Cost		3,989,000		Entire Project	0	Mar 1988
Reimbursement	$ 977,000					
Cash Contribution	2,442,000					
Other	570,000					
Total Estimated Project Cost		$10,350,000				
Allocations to 30 September 1985		295,000				
Conference Allowance for FY 1986		0				
Allocation for FY 1986		0				
Allocation to Date		295,000	4			
Allocation Requested for FY 1987 1/		2,000,000	31			
Scheduled Balance to Complete After FY 1987		5,033,000				
Unscheduled Balance to Complete After FY 1987		0				

1/ Obligation and expenditure of budgeted funds for construction of this project are contingent upon enactment of legislation enabling recovery of all or part of the costs to be expended by the Federal Government in accordance with the agreement between the Administration and the Senate Majority Leadership.

Division: South Atlantic District: Jacksonville Region: Puerto Rico-Virgin Islands
Ponce Harbor, Puerto Rico

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PHYSICAL DATA

Channel: Modifies existing Federal project to provide a 36-foot-deep, 600-foot-wide channel from the Caribbean Sea approximately 2.8 miles up to the port; a 36-foot-deep, 400-foot-wide channel; and a 950-foot-diameter 36-foot-deep turning and maneuvering basin adjacent to the main port berthing area.

JUSTIFICATION: The Municipality of Ponce has historically been a central distribution system for the southern region of Puerto Rico. Recent improvement of port facilities will enable the port to make a significant contribution to the traffic flow. The recommended plan would provide deeper water access to new and proposed terminal development and permit deeper-draft ships to use those facilities. Containerized commerce would be the major traffic feature. Commerce for 1982 totaled 726,182 tons. The major items of commerce were crude petroleum and petroleum products. Other commodities consisted of fresh fish, building cement, limestone, basic chemicals and various other general cargo.

The entire island of Puerto Rico has been designated a redevelopment area under Section 401(a)(2) of P.L. 89-136. Estimated average annual benefits are $5,340,000, all for navigation.

FISCAL YEAR 1987: The requested amount will be applied as follows:

Initiate contract to deepen Main Channel and Turning Basin	$ 1,866,000
Engineering and Design	40,000
Supervision and Administration	94,000
TOTAL	$ 2,000,000

COMPLETED MODIFICATIONS: The existing improvements at Ponce Harbor were authorized by the River and Harbor Acts of 3 March 1925, 30 August 1935, and 2 March 1945, and provided for: a seawall 362 feet long; dredging two areas north of the causeway leading to the pier, 30 feet deep and 18 feet deep, containing about 77 and 47 acres, respectively; dredging an area off the municipal pier 30 feet deep, containing about 18 acres; and a breakwater 2,400 feet long extending southwesterly from Punta Carenero. The project is about 12% completed. Work remaining for the Federal portion of the project consists of completing the dredging of the 30-foot maneuvering area next to the municipal bulkhead terminal; dredging the 18-foot area; dredging the 30-foot area serving the municipal pier; and constructing a breakwater extending southwesterly from Carenero Point. A study completed in 1959 found that completion of the remaining work was not justified at that time. A total of $187,882 has been expended to date, including a $21,960 cash contribution from the local sponsor.

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NON-FEDERAL COST: Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, the local interests will be required to provide administrative costs associated with lands, presently estimated at $4,200, dredge berthing areas, presently estimated at $565,800; and pay 25 percent of the costs allocated to deep draft navigation during construction presently estimated at $2,442,000, and pay an additional 10 percent of the costs allocated to deep draft navigation within a period of 30 years following completion presently estimated at $977,000. Non-Federal cost is as follows:

Cash Contribution	$ 2,442,000
Reimbursement	977,000
Administrative Land Cost	4,200
Dredge Berthing Areas	565,800
TOTAL	$ 3,989,000

STATUS OF LOCAL COOPERATION: Satisfactory assurances to assume the requirements of local cooperation were received from the Puerto Rico Ports Authority by letter dated 17 January 1974. In conformance with Section 221 of the Flood Control Act of 1970 (P.L. 91-611), a binding agreement with the local sponsor agreeing to provide the requirements of local cooperation will be obtained prior to commencement of construction.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate is $7,328,000, including an allowance for inflation from 1 October 1985 through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final EIS was filed with CEQ on 15 June 1976. The provisions of Section 404 of the Clean Water Act were satisfied by Water Quality Certification from Puerto Rico in February 1981 and preparation of a Section 404(b)(1) Evaluation Report in April 1981.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1979.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Jacksonville

Project: Ponce Harbor, Puerto Rico

Item	Estimates Presented to Congress ($1,000) Original Baseline	Cumulative Changes	Last	Incremental Change	Current
Federal Cost (Price Level)	7,328 1/ (Oct 85)				7,328 1/ (Oct 85)
Reason for Change		(0)		(0)	
a. Price Escalation		0		0	
b. Design Changes		0		0	
c. Additional Functions Added Under General Authority		0		0	
d. Authorized Modifications		0		0	
e. Post-Contract Award and Other Estimating Adjustments		0		0	
f. Schedule Changes		0		0	
g. Sundry		0		0	
h. Real Estate		0		0	

NOTE: 1/ Includes a $280 allowance for estimated inflation from 1 October 1985 through the construction period.

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REPORTS CONTROL SYMBOL DAEN-CWB-E

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: Channels & Harbors (Navigation Project)

SUMMARY CONSTRUCTION PROGRAM (PB 1)
FISCAL YEARS 19 86 AND 19 87

LINE NO.	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
(a)	(a)	(b)	(c)	(d)	(e)	(f)
1	Channels & Canals	8,839,000	-	-	2,300,000	6,539,000
2	Engineering & Design	485,000	239,000	56,000	150,000	40,000
3	Supervision & Administration	446,000	-	-	217,000	229,000
4						
5	Total Applied Cost (Fed & Non-Fed)	9,770,000	239,000	56,000	2,667,000	6,808,000
6	Undistributed Costs (None)					
7	Total Project Cost (Fed & Non-Fed)	9,770,000	239,000	56,000	2,667,000	6,808,000
8	Pending Adjustments (None)					
9	Total Cost (Fed & Non-Fed)	9,770,000	239,000	56,000	2,667,000	6,808,000
10	Undelivered Orders					
11	Total Obligations		239,000	56,000	2,667,000	6,808,000
12						
13	Federal Funds					
14	Total Applied Cost	7,328,000	239,000	42,000	2,014,000	5,033,000
15	Undistributed Cost (None)					
16	Total Project Cost	7,328,000	239,000	42,000	2,014,000	5,033,000
17	Pending Adjustments (None)					
18	Total Cost	7,328,000	239,000	42,000	2,014,000	5,033,000
19	Undelivered Orders (None)					
20	Total Obligations		239,000	42,000	2,014,000	5,033,000
21						
22	Non-Federal Funds					
23	Total Applied Cost	2,442,000	-	14,000	653,000	1,775,000
24	Undistributed Cost (None)					
25	Total Project Cost	2,442,000	-	14,000	653,000	1,775,000
26	Pending Adjustments (None)					
27	Total Cost	2,442,000	-	14,000	653,000	1,775,000
28	Undelivered Orders (None)					
29	Total Obligations		-	14,000	653,000	1,775,000
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC	PUERTO RICO-VIRGIN ISL	PONCE HARBOR, PUERTO RICO
	DISTRICT JACKSONVILLE	BASIN PUERTO RICO	

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

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REPORTS CONTROL SYMBOL

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Channels & Harbors (Navigation Project)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO.	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Method of Financing					
2	Federal Funds					
3	Allocations	7,328,000	295,000			
4	Unobligated Carryover from Prior Yr			56,000		
5	Total Funds Available for Obligation					
6	Appropriation Required				2,000,000	5,033,000
7						
8	Non-Federal Funds					
9	Contribution	2,442,000	-			
10	Unobligated Carryover from Prior Yr					
11	Total Funds Available for Obligation					
12	Contribution Required				667,000	1,775,000
13						
14	Lands	4,000			4,000	
15	Dredging Berthing Areas	566,000			566,000	
16	Total Non-Federal Cost	3,012,000			1,237,000	1,775,000
17						
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EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC	PUERTO RICO-VIRGIN ISL	PONCE HARBOR, PUERTO RICO
	DISTRICT JACKSONVILLE	BASIN PUERTO RICO	

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Threemile Creek, Mobile, AL (New)

LOCATION: The project is located near the Gulf of Mexico in the southwest corner of the State of Alabama and in the city of Mobile, approximately 180 miles south of Montgomery, Alabama.

AUTHORIZATION: Not authorized; implementation is contingent upon enactment of pending legislation to authorize construction.

BENEFIT-TO-COST RATIO: The benefit-to-cost ratio is 1.1 to 1 at 8 5/8 percent. The benefit-to-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

			ACCUM. PCT. OF ESTMTD COST
Estimated Federal Cost (CofE)		$ 9,470,000	
Estimated Non-Federal Cost		10,980,000	
Cash Contribution	$1,020,000		
Other	9,960,000		
Total Estimated Project Cost		$20,450,000	
Allocations to 30 September 1985		62,000	
Conference Allowance for FY 1986		0	
Allocation for FY 1986		0	
Allocations to Date		62,000	1
Allocation Requested for FY 1987		2,300,000	25
Scheduled Balance to Complete after FY 1987		7,108,000	
Unscheduled Balance to Complete after FY 1987		0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Construction not started		
Relocations		
Railroad Bridge	0	Sep 87
Railroad Spur	0	Sep 87
Channels & Canals	0	Sep 88
Recreation	0	Sep 88
Entire Project	0	Sep 88

1251

Division: South Atlantic

District: Mobile

Region: South Atlantic - Gulf
Threemile Creek, Mobile, AL

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PHYSICAL DATA

RELOCATIONS:	Railroad Bridge Modification	2	($244,000)
	Railroad Spur line Relocation	1	($ 56,000)
CHANNELS:	Channel Improvement	29,500 ft.	
	Flow Control Dikes	30,410 ft.	
	Drop Structures	5	
	Drainage Structures	33	

JUSTIFICATION: Threemile Creek originates in the Western part of Mobile, Alabama and flows easterly about 14 miles to enter the Mobile River near the Alabama State Docks. The drainage area of the basin consists of 39 square miles of urbanized area. The Threemile Creek flood control project protects mainly the downstream portion of the project, which has a history of flooding with the most recent events occurring in April and May of 1980 and May 1981. The 1980 floods damaged about 500 homes, numerous businesses, and caused extensive damage to roads, utilities, and other public facilities. Total damages were estimated to be about $17,000,000. The May 1981 flood damaged approximately 1,000 homes and 100 businesses. These damages were estimated at $23,400,000. As a result of the floods and Hurricane Frederic in September 1979, Mobile was declared a Federal disaster for 3 consecutive years. There are 1,209 structures existing in the floodplain valued at $114,000,000, of which 1,105 are residential and 104 are Commercial/Industrial structures. Average annual damages without the project are $2,055,000 and $116,000 with the project. The project will reduce damages about 96 percent. All flood damage prevention benefits are urban with 95 percent attributable to existing development and 5 percent to future development. Average annual benefits are as follows:

BREAKDOWN OF AVERAGE ANNUAL BENEFITS

ITEM	AMOUNT (1 Oct 85)
Flood Control	$2,046,000
Recreation	20,000
Total	$2,066,000

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Revised 14 January 1986

FISCAL YEAR 1987: The requested amount will be applied as follows:

Initiate Relocations	$ 270,000
Initiate Channels & Canals	1,580,000
Engineering and Design	270,000
Supervision and Administration	180,000
Total	$2,300,000

NON-FEDERAL COST: Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $4,730,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $5,120,000; pay one-half of the separable and joint cost allocated to recreation, presently estimated at $110,000; pay 5 percent of the total project cost, presently estimated at $1,020,000, and bear all costs of operation, maintenance, and replacement of flood control facilities presently estimated at $36,000 annually. The local sponsor, the city of Mobile, is required to make all payments and voluntary contributions concurrently with project construction.

STATUS OF LOCAL COOPERATION: The city of Mobile provided the Corps of Engineers with a letter dated 17 September 1985 stating their support for the project under current proposed cost-sharing guidelines.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate is $9,280,000 including an allowance for inflation from 1 October 1985 through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:
An EIS was contained in the Interim Survey Report dated September 1982. A Final EIS was filed with the EPA on 10 November 1983. The provisions of Section 404 of the Clean Water Act have been met. State Water Quality Certification was issued by the State of Alabama for the project as proposed in the Interim Survey Report on 23 August 1982. A new Section 404(b)(1) evaluation including General Design Memorandum (GDM) modifications was completed June 1984; Public Notice was issued 25 July 1984; Water Quality Certification was issued by the State of Alabama on 24 August 1984, and the District Commander signed the GDM Report on 31 August 1984.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Mobile

Project: Threemile Creek - Mobile, Alabama

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	9,470 1/ (Oct 85)				9,470 1/ (Oct 85)

Reason for Change

a. Price Escalation
b. Design Changes
c. Additional Function Added Under General Authorization
d. Authorized Modification
e. Post-Contract Award and Other Estimating Adjustments
f. Schedule Changes
g. Sundry
h. Real Estate

NOTE:
1/ Includes $495,000 allowance for estimated inflation from 1 October 1985 through the construction period.

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4 FEB 1986 1254

REPORTS CONTROL SYMBOL: DAEN-CWR-17

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: Flood Control (Local Protection)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Relocation	300,000			300,000	
2	Channels and Canals	8,780,000			1,700,000	7,080,000
3	Recreation Facilities	110,000				110,000
4	Engineering and Design	750,000	200,000	55,000	300,000	195,000
5	Supervision and Administration	550,000		7,500	200,000	342,500
6						
7	Total Applied Cost (Fed. & Non-Fed. Funds)	10,490,000	200,000	62,500	2,500,000	7,727,500
8	Undistributed Costs - None					
9	Total Project Cost (Fed. & Non-Fed. Funds)	10,490,000	200,000	62,500	2,500,000	7,727,500
10	Pending Adjustments - None					
11	Total Cost (Fed. and Non-Fed. Funds)	10,490,000	200,000	62,500	2,500,000	7,727,500
12	Undelivered Orders - None					
13	Total Obligation		200,000	62,500	2,500,000	7,727,500
14						
15	Federal Funds					
16	Total Applied Cost	9,470,000		62,500	2,300,000	7,107,500
17	Undistributed Costs - None					
18	Total Project Cost	9,470,000		62,500	2,300,000	7,107,500
19	Pending Adjustments - None					
20	Total Cost	9,470,000		62,500	2,300,000	7,107,500
21	Undelivered Orders - None					
22	Total Obligation			62,500	2,300,000	7,107,500
23						
24	Non-Federal Funds					
25	Total Applied Cost	1,020,000	200,000		200,000	620,000
26	Undistributed Costs - None					
27	Total Project Cost	1,020,000	200,000		200,000	620,000
28	Pending Adjustments - None					
29	Total Cost	1,020,000	200,000		200,000	620,000
30	Undelivered Orders - None					
31	Total Obligation		200,000		200,000	620,000
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 Jan 86	South Atlantic	South Atlantic - Gulf	Threemile Creek, Mobile, Alabama
	DISTRICT Mobile	BASIN Mobile-Tombigbee	

ENG FORM 6 SEP 74 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

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REPORTS CONTROL SYMBOL DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Flood Control (Local Protection)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Method of Financing					
2	Federal Funds					
3	Allocations	9,470,000	62,500			
4	Unobligated Carryover from Prior Year			62,500		
5	Total Funds Available for Obligation			62,500		
6	Appropriation Required				2,300,000	7,107,500
7						
8	Non-Federal Funds					
9	Contributions	1,020,000	200,000			
10	Unobligated Carryover from Prior Year					
11	Total Funds Available for Obligation					
12	Contributions Required				200,000	620,000
13	Other Costs	9,960,000	5,530,000	600,000	2,460,000	1,370,000
14	Lands and Damages	(4,730,000)	(3,200,000)	(600,000)	(930,000)	
15	Relocations	(5,120,000)	(2,330,000)		(1,530,000)	(1,260,000)
16	Other (Recreation)	(110,000)				(110,000)
17	Total Non-Federal Cost	10,980,000	5,730,000	600,000	2,660,000	1,990,000
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EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 Jan 86	South Atlantic	South Atlantic-Gulf	Threemile Creek, Mobile, Alabama
	DISTRICT Mobile	BASIN Mobile-Tombigbee	

ENG FORM 1 SEP 76 2280 (ER 11-2-340) EDITION OF 1 NOV 74 IS OBSOLETE.

4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Sowashee Creek, Meridian, MS (New)

LOCATION: The project is located in East Central Mississippi, Lauderdale County, in the city of Meridian, which is approximately 90 miles east of Jackson, Mississippi.

AUTHORIZATION: Not authorized; implementation is contingent upon enactment of pending legislation to authorize construction.

BENEFIT-TO-COST RATIO: The benefit-to-cost ratio is 1.3 to 1 at 8 5/8%. The benefit-to-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

			ACCUM. PCT. OF ESTMTD. COST
Estimated Federal Cost (CofE)		$11,250,000	
Estimated Non-Federal Cost		7,750,000	
Cash Contributions	$ 987,000		
Other Costs	6,763,000		
Total Estimated Project Cost		$19,000,000	
Allocations to 30 September 1985		36,000	
Conference Allowance for FY 1986		0	
Allocation for FY 1986		100,000	
Allocations to Date		136,000	1
Allocation Requested for FY 1987		900,000	9
Scheduled Balance to Complete after FY 1987		10,214,000	
Unscheduled Balance to Complete after FY 1987		0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Construction not started		
Lands and Damages	0	Sep 88
Relocations	0	Dec 87
Channels and Canals	0	Mar 89
Cultural Resources	0	Sep 87
Entire Project	0	Mar 89

Division: South Atlantic

District: Mobile

Region: South Atlantic - Gulf
Sowashee Creek, Meridian, MS

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PHYSICAL DATA

Relocations:

Railroad bridge modification	1 ($150,000)

Channels:

Channel enlargement	3.9 miles
Clearing and snagging	6.6 miles

JUSTIFICATION: The Sowashee Creek flood control project protects mostly commercial and industrial urban areas of Meridian, Mississippi. Sowashee Creek has a history of flooding, dating back to the 1930's. The maximum flood of record occurred in 1936 with damages at 1985 price level of $54,544,200. Additional floods have occurred in 1938, 1951, 1964, 1972, and 1974. There are 1164 structures existing in the floodplain valued at $296,000,000. There are 610 residential, 361 commercial, 102 industrial, and 91 other structures. Average annual existing damages without the project are $3,252,000 and $1,043,000 with the project. The project will reduce the existing damages about 70%. All flood damage prevention benefits are urban with 91% attributable to existing development and 9% to future development. Average annual benefits are as follows:

BREAKDOWN OF AVERAGE ANNUAL BENEFITS

ITEM	AMOUNT (1 Oct 85)
Flood Control	$2,018,000
Area Redevelopment	201,000
Total	$2,219,000

FISCAL YEAR 1987: The requested amount will be applied as follows:

Initiate Relocations	$ 40,000
Initiate Channel Modification	80,000
Initiate and Complete Cultural Resources	100,000
Engineering and Design	570,000
Supervision and Administration	110,000
TOTAL	$900,000

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NON-FEDERAL COSTS: Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, and rights-of-way, and required disposal areas, presently estimated at $1,500,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary, in the construction of the project, presently estimated at $5,263,000; pay 5 percent of the costs allocated to flood control, presently estimated at $950,000, and bear all cost of operation, maintenance, and replacement of flood control facilities, presently estimated at $18,000 annually; pay 20 percent of total first cost allocated to the nonstructual portion of the project, presently estimated at $11,000; pay a percentage of total mitigation cost commensurate with total project cost-sharing, presently estimated at $76,000. The local sponsor, Pat Harrison Waterway District, is required to make all payments and voluntary contributions concurrently with project construction.

STATUS OF LOCAL COOPERATION: The local sponsor is Pat Harrison Waterway District. The sponsor provided a Letter of Assurance in May 1984 under traditional cost-sharing guidelines which equated to a non-Federal share representing 35 percent of the total project cost. The local sponsor has been advised of the cost-sharing and financing concepts agreed to by the Administration and Senate Majority Leadership. The sponsor reaffirmed its support by letter dated 18 September 1985. In September 1985, the city of Meridian recommitted $5,000,000 in bonds originally authorized for the project in 1983.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate is $11,250,000 including an allowance for inflation from 1 October 1985 through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement (EIS) was filed with the Environmental Protection Agency (EPA) in October 1984. The provisions of Section 404 of the Clean Water Act were originally met in the Phase I GDM. The provisions of Section 404 of the Clean Water Act, including the modified channel alignment, are scheduled to be met by a new Section 404(b)(1) Evaluation which will be completed in February 1986 (preliminary Section 404(b)(1) Evaluation was completed in December 1985), Public Notice was issued on 20 December 1985, Water Quality Certification from the State of Mississippi in the second quarter FY 1986, and the District Commander's signature on Finding of Compliance report in the second quarter FY 1986.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1985.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Mobile

Project: Sowashee Creek, Meridian, MS

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	11,250 1/ (Oct 85)				11,250 1/ (Oct 85)

Reason for Change

a. Price Escalation
b. Design Changes
c. Additional Function Added Under General Authorization
d. Authorized Modification
e. Post-Contract Award and Other Estimating Adjustments
f. Schedule Changes
g. Sundry
h. Real Estate

NOTE:
1/ Includes $725,000 allowance for estimated inflation from 1 October 1985 through the construction period.

4 FEB 1986 1260

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: Flood Control (Local Protection)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LN NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Lands and Damages	55,000				55,000
2	Relocations	150,000			50,000	100,000
3	Channels and Canals	10,442,000			90,000	10,352,000
4	Cultural Resources	110,000			110,000	
5	Engineering and Design	840,000		120,000	630,000	90,000
6	Supervision and Administration	640,000		15,800	120,000	504,200
7						
8	Total Applied Cost (Fed. & Non-Fed. Funds)	12,237,000		135,800	1,000,000	11,101,200
9	Undistributed Costs - None					
10	Total Project Cost (Fed. & Non-Fed. Funds)	12,237,000		135,800	1,000,000	11,101,200
11	Pending Adjustments - None					
12	Total Cost (Fed. and Non-Fed. Funds)	12,237,000		135,800	1,000,000	11,101,200
13	Undelivered Orders - None					
14	Total Obligation			135,800	1,000,000	11,101,200
15						
16	Federal Funds					
17	Total Applied Cost	11,250,000		135,800	900,000	10,214,200
18	Undistributed Costs - None					
19	Total Project Cost	11,250,000		135,800	900,000	10,214,200
20	Pending Adjustments - None					
21	Total Cost	11,250,000		135,800	900,000	10,214,200
22	Undelivered Orders - None					
23	Total Obligation			135,800	900,000	10,214,200
24						
25	Non-Federal Funds					
26	Total Applied Cost	987,000			100,000	887,000
27	Undistributed Costs - None					
28	Total Project Cost	987,000			100,000	887,000
29	Pending Adjustments - None					
30	Total Cost	987,000			100,000	887,000
31	Undelivered Orders - None					
32	Total Obligation				100,000	887,000
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 Jan 86	South Atlantic	South Atlantic - Gulf	
	DISTRICT Mobile	BASIN Pascagoula River	Sowashee Creek, MS

ENG FORM 1 SEP 78 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Flood Control (Local Protection)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Method of Financing					
2	Federal Funds					
3	Allocations	11,250,000	35,800	100,000		
4	Unobligated Carryover from Prior Year			35,800		
5	Total Funds Available for Obligation			135,800		
6	Appropriation Required				900,000	10,214,200
7						
8	Non-Federal Funds					
9	Contributions	987,000				
10	Unobligated Carryover from Prior Year					
11	Total Funds Available for Obligation					
12	Contributions Required				100,000	887,000
13	Other Costs	6,763,000			4,100,000	2,663,000
14	Lands and Damages	(1,500,000)			(1,500,000)	
15	Relocations	(5,263,000)			(2,600,000)	(2,663,000)
16	Total Non-Federal Cost	7,750,000			4,200,000	3,550,000
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EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 Jan 86	South Atlantic	South Atlantic-Gulf	Sowashee Creek, MS
	DISTRICT Mobile	BASIN Pascagoula River	

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

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APPROPRIATION: Construction, General - Channels and Harbors (Navigation)

PROJECT: Mobile Harbor (Deepening), Alabama (Continuing)

LOCATION: The Mobile Harbor (Deepening), Alabama, project is located in southwest Alabama and extends from the Gulf of Mexico through Mobile Bay to the mouth of Mobile River at the city of Mobile, Alabama, a distance of 39.0 miles. Mobile Bay lies between Mobile and Baldwin Counties, Alabama.

AUTHORIZATION: Supplemental Appropriations Act of 1985

BENEFIT-TO-COST RATIO: The remaining benefit-remaining cost ratio is 2.8 to 1 at 8 1/8 percent. The benefit-to-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 2.8 to 1. The benefit-to-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

Estimated Appropriation Requirement (CofE)		$228,980,000
Scheduled Construction	$ 48,250,000	
Unscheduled Construction	180,730,000	
Estimated Appropriation Requirement (USCG)		1,850,000
Scheduled Construction	100,000	
Unscheduled Construction	1,750,000	
Estimated Total Appropriation Requirement		230,830,000
Scheduled Construction	48,350,000	
Unscheduled Construction	182,480,000	
Future Non-Federal Reimbursement		39,850,000
Scheduled Construction	8,900,000	
Unscheduled Construction	30,950,000	
Estimated Federal Cost (Ultimate)		190,980,000
Scheduled Construction	39,450,000	
Unscheduled Construction	151,530,000	

1/ Obligation and expenditure of budgeted funds for construction of this project are contingent upon enactment of legislation enabling recovery of all or part of the costs to be expended by the project sponsor and the Federal Government in accordance with the Agreement between the Administration and the Senate Majority Leadership.

Estimated Non-Federal Cost		$223,820,000
Scheduled Construction	49,650,000	
Cash Contribution	40,750,000	
Other Costs	0	
Reimbursement: Nav.	8,900,000	
Unscheduled Construction	174,170,000	
Cash Contribution	128,770,000	
Other Costs	14,450,000	
Reimbursement: Nav.	30,950,000	
Total Estimated Scheduled Construction Cost		89,100,000
Total Estimated Unscheduled Construction Cost		325,700,000
Total Estimated Project Cost		414,800,000

		ACCUM. PCT. OF ESTMTD. COST
Allocations to 30 September 1985	$ 306,000	
Conference Allowance for FY 1986	0	
Potential Allocation for FY 1986	0	
Potential Allocations through FY 1986	306,000	0
Allocation Requested for FY 1987	15,000,000 1/	7
Scheduled Balance to Complete after FY 1987	32,944,000	
Unscheduled Balance to Complete after FY 1987	180,730,000	

Division: South Atlantic District: Mobile Region: South Atlantic - Gulf

Mobile Harbor (Deepening), AL

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STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE 1/
Construction not started		
Channels and Canals	0	Dec 88
Entire Project	0	Dec 88

1/ For scheduled work only; remaining work is not scheduled pending determination of need.

PHYSICAL DATA:

Channels: The scheduled work consists of deepening the entrance channel from 42 feet to 57 feet for a distance of 7 1/2 miles from the Gulf of Mexico to Mobile Bay; deepening the bay channel from 40 feet to 55 feet from the mouth of the bay north for a distance of 3 1/2 miles to the transshipment facility; and constructing a 52 acre turning basin 40 feet deep opposite the McDuffie Terminal.

JUSTIFICATION: Mobile Harbor is a leading harbor on the Gulf Coast, particularly with regard to coal shipments. Waterborne commerce for 1983 was over 26 million tons, down from the record tonnage in 1981 of 37 million tons. Prospective tonnage is estimated to reach 45 million tons in 2015. Presently, coal shipments average 10 million tons per year. Channel deepening and navigational improvement features are required to provide a safe and efficient harbor for the large coal vessels calling at the Port of Mobile. The capacity of the McDuffie Coal Handling Terminal is 25 million tons annually. U.S. Department of Energy's "Energy Information Administration's Coal Transport Model" suggest growth in coal shipments through the Port of Mobile over the next 20 years, from 10 to 19 million tons annually.

Vessels that can economically utilize the existing Federal 40-foot channel have a carrying capacity of about 45,000 to 50,000 deadweight tons. With a 55-foot channel, vessels with carrying capacities of 145,000 to 150,000 deadweight tons can be economically utilized. This increase in carrying capacity results in a corresponding increase in economies of scale and savings in transportation costs. Transportation savings on coal exported to Europe of $5 to $6 per ton would be realized by using the larger vessels. Coal shipped to Japan in the larger vessels would realize a savings of about $16 per ton. Iron ore imported from Canada and Brazil could also be shipped more economically at savings of about $3 and $5.25 respectively. The average annual benefits are $138,256,000, all for navigation.

FISCAL YEAR 1987: The requested amount will be applied as follows:

Initiate Bay Channel Contract	$ 2,700,000
Initiate Bar Channel Contract	11,000,000
Continue Engineering and Design	500,000
Continue Supervision and Administration	800,000
Total	$15,000,000

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COMPLETED MODIFICATIONS: Channels 42x600 feet across Mobile Bar, 40x400 feet in Mobile Bay, 40 feet with varying widths (500 feet to 775 feet) in Mobile River, and several turning basins and branch channels. The most recent main channel modification was authorized by the River and Harbor Act of 3 September 1954 and provided a 40-foot depth and 400-foot width in Mobile Bay. The most recent construction in Mobile Harbor was the Theodore Ship Channel which was completed in September 1981, which provided a 40x400-foot channel for the main ship channel to the Theodore Industrial Park.

REMAINING MODIFICATIONS: The unscheduled work (remaining) consists of widening the entrance channel from 600 feet to 700 feet; widening the bay channel south of the transshipment facility from 400 feet to 550 feet; deepening and widening the bay channel north of the transshipment facility from a 40x400-foot channel to a 55x550-foot channel; constructing a 55 acre anchorage area 40 feet deep opposite the McDuffie Terminal; and constructing a 750 acre disposal island just offshore of the Brookley complex.

NON-FEDERAL COST: Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to pay 25 percent of the costs allocated to deep draft navigation (down to 45 feet), during construction, presently estimated at $3,760,000; pay 50 percent of the costs allocated to deep draft navigation (below 45 feet) during construction, presently estimated at $36,990,000; pay an additional 10 percent of the costs allocated to deep draft navigation within a period of 30 years following completion with a present value currently estimated at $8,900,000; and pay 50 percent of the costs of incremental maintenance below 45 feet below mean low water.

In addition, local interests advise that they have incurred costs of $235,384,000 for the construction of wharves, docks, and material handling facilities and propose to incur additional costs of $49,200,000 for docks and material handling facilities.

STATUS OF LOCAL COOPERATION: The local sponsor is the Alabama State Docks Department, State of Alabama. By letter dated 7 July 1982, the Alabama State Docks (ASD) Department reaffirmed its full support for the project and its intent to provide financial participation in project construction at levels consistent with the administration's proposals, subject to congressional action, and the Department's ability to meet the financial obligations. A Local Cooperation Agreement will be executed prior to 30 June 1986 for construction of the channel to the transshipment facility.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal (Corps of Engineers) cost estimate of $228,980,000 is a decrease of $198,307,000 from the latest estimate ($427,287,000, October 1983) submitted to Congress (FY 1985). This change includes a decrease of $56,871,000 based on price levels to 1 October 1985; $20,035,000 for an estimated inflation allowance from 1 October 1985 through the construction period; an increase of $5,429,000 for design changes, which include ($4,353,000) increase for addition of passing lanes; ($16,209,000) increase in quantities based on new and more detailed hydrographic surveys. The increases were partially offset by a decrease ($15,133,000) as a result of

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COMPARISON OF FEDERAL COST ESTIMATE: (Cont'd)
detailed studies during preparation of the General Design Memorandum. The decrease was composed of $6,601,000 for elimination of channel widening in the area adjacent to the turning basin, and $8,532,000 for reducing the depth of the turning basin and anchorage area from 55' to 40' and changing the relative location of the two basins; and a decrease of $166,900,000 based on cost-sharing requirements for local interests.

STATUS OF ENVIRONMENTAL IMPACT STATEMENTS AND COMPLIANCE WITH CLEAN WATER ACT: Final Environmental Impact Statement (EIS) was filed with the Environmental Protection Agency (EPA) on 22 May 1981. The final supplement to the Mobile Harbor, Alabama, Channel Improvement EIS for designation of the Gulf Disposal site was filed with EPA on 13 December 1985. The Mobile Harbor Feasibility Report was not submitted to Congress prior to the Bill which authorized the project. The Report will be provided to Congress prior to an appropriation of funds for construction. Consequently, the provisions of Section 404(r) regarding exclusion of the project from State Water Quality Certification will still apply.

OTHER INFORMATION: Funds to initiate continuation of Planning and Engineering were appropriated in FY 1982. Funds to initiate construction were appropriated in FY 1985.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Mobile

Project: Mobile Harbor (Deepening), Alabama

Estimates Presented to Congress ($1,000)

Item	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	427,287 (Oct 83)		427,287 (Oct 83)		228,980 1/ (Oct 85)
Reason for Change				(-198,307)1/	
a. Price Escalation				-36,836	
b. Design Changes				5,429 2/	
c. Additional Function Added Under General Authorization					
d. Authorized Modification					
e. Post-Contract Award and Other Estimating Adjustments					
f. Schedule Changes					
g. Sundry				-166,900 3/	
h. Real Estate					

NOTE:

1/ Includes $20,035,000 allowance for estimated inflation from 1 October 1985 through the construction period.

2/ Increase $5,429,000 for design changes which includes ($6,353,000) increase for addition of passing lanes; ($16,209,000) increase in quantities based on new and more detailed hydrographic surveys; the increases were partially offset by a decrease ($15,133,000) as a result of detailed studies during preparation of the General Design Memorandum. The decrease was composed of ($6,601,000) for elimination of channel widening in the area adjacent to the turning basin and ($8,532,000) for reducing the depth of the turning basin and anchorage area from 55' to 40' and changing the relocation of the two basins.

3/ Decrease ($166,900,000) based on cost-sharing requirements for local interests.

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REPORTS CONTROL SYMBOL: DAEN-CWR-

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Channels and Harbors (Navigation)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 85 AND 19 86

LN NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Channels and Canals	371,590,000			25,600,000	345,990,000
2	Engineering and Design	10,660,000		275,000	900,000	9,485,000
3	Supervision and Administration	16,250,000		31,500	1,500,000	14,718,500
4						
5	Total Applied Cost (Fed & Non-Fed Funds)	398,500,000		306,500	28,000,000	370,193,500
6	Undistributed Costs - None					
7	Total Project Cost (Fed & Non-Fed Funds)	398,500,000		306,500	28,000,000	370,193,500
8	Pending Adjustments - None					
9	Total Cost (Fed & Non-Fed Funds)	398,500,000		306,500	28,000,000	370,193,500
10	Undelivered Orders - None					
11	Total Obligation			306,500	28,000,000	370,193,500
12						
13	Federal Funds					
14	Total Applied Cost	228,980,000		306,500	15,000,000	213,673,500
15	Undistributed Costs - None					
16	Total Project Cost	228,980,000		306,500	15,000,000	213,673,500
17	Pending Adjustments - None					
18	Total Cost	228,980,000		306,500	15,000,000	213,673,500
19	Undelivered Orders - None					
20	Total Obligation			306,500	15,000,000	13,673,500
21						
22	Non-Federal Funds					
23	Total Applied Cost	169,520,000			13,000,000	156,520,000
24	Undistributed Costs - None					
25	Total Project Cost	169,520,000			13,000,000	156,520,000
26	Pending Adjustments - None					
27	Total Cost	169,520,000			13,000,000	156,520,000
28	Undelivered Orders - None					
29	Total Obligation				13,000,000	156,520,000
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 Jan 86	South Atlantic	South Atlantic - Gulf	Mobile Harbor (Deepening), AL
	DISTRICT Mobile	BASIN Mobile-Tombigbee	

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: Channels and Harbors (Navigation)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Method of Financing					
2	Federal Funds					
3	Allocations	228,980,000	306,500			
4	Unobligated Carryover from Prior Year			306,500		
5	Total Funds Available for Obligation			306,500		
6	Appropriation Required				15,000,000	213,673,500
7						
8	Non-Federal Funds					
9	Contributions	169,520,000				
10	Unobligated Carryover from Prior Year					
11	Total Funds Available for Obligation					
12	Contributions Required				13,000,000	156,520,000
13	Other Costs	14,450,000				14,450,000
14	Lands & Damages (None)	-				
15	Relocations (None)	-				
16	Other	14,450,000				14,450,000
17	Dredging Berthing Areas	(620,000)				(620,000)
18	Grassing Disposal Areas	(1,560,000)				(1,560,000)
19	Dike Dressing and Shaping	(2,500,000)				(2,500,000)
20	Outflow Structures	(500,000)				(500,000)
21	Revetment on Disposal Dikes	(5,800,000)				(5,800,000)
22	Mooring Facilities	(1,970,000)				(1,970,000)
23	Diking	(1,500,000)				(1,500,000)
24	Total Non-Federal Cost	183,970,000			13,000,000	170,970,000
25						
26						
27						
28						
29						
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 Jan 86	South Atlantic	South Atlantic-Gulf	Mobile Harbor (Deepening), AL
	DISTRICT Mobile	BASIN Mobile-Tombigbee	

ENG FORM 1 SEP 78 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

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APPROPRIATION TITLE: Construction, General - Locks and Dams (Navigation)

PROJECT: William Bacon Oliver Lock and Dam (Replacement), Alabama (Continuing)

LOCATION: The project is located on the Black Warrior River in Tuscaloosa County within the city limits of Tuscaloosa, Alabama.

AUTHORIZATION: Supplemental Appropriations Act of 1985

BENEFIT-TO-COST RATIO: The remaining benefit-remaining cost ratio is 3.1 to 1 at 8 1/8 percent. The benefit-to-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 3.1 to 1. The benefit-to-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

Estimated Federal Cost		$130,000,000
General Appropriations	$65,000,000	
Inland Waterway Trust Fund	65,000,000	
Estimated Non-Federal Cost		0
Total Estimated Project Cost		$130,000,000

	GENERAL APPNS.	INLAND WATERWAYS TRUST FUND	ACCUM. PCT. OF ESTMTD. COST
Allocations to 30 September 1985	$ 1,002,000		
Conference Allowance for FY 1986	0		
Potential Allocation for FY 1986	3,065,000	$ 1,533,000	
Potential Allocations to Date	4,067,000	1,533,000	4
Allocation Requested for FY 1987	10,500,000 1/	10,500,000 1/	20
Scheduled Balance to Complete after FY 1987	50,433,000	52,967,000	
Unscheduled Balance to Complete after FY 1987	0	0	

1/ Obligations and Expenditures of the budgeted funds for construction of this project are contingent upon enactment of legislation increasing the amount of revenue derived from taxes imposed on fuels used by vessels engaged in commercial waterway transportation in accordance with the Agreement between the Administration and the Senate Majority Leadership.

Division: South Atlantic

District: Mobile

Region: South Atlantic - Gulf
William Bacon Oliver Lock & Dam
(Replacement), AL

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STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Construction not started		
Lands and Damages	0	Sep 89
Relocations	0	Sep 86
Dams	0	Sep 91
Locks	0	Sep 91
Roads	0	Sep 91
Channels and Canals	0	Sep 91
Cultural Resources	0	Jun 87
Buildings, Grounds, and Utilities	0	Sep 91
Permanent Operating Equipment	0	Sep 91
Entire Project	0	Sep 91

PHYSICAL DATA

Lock: (110' x 600') lift, 28 feet

Relocations: $300,000
Utilities 300,000

Lands and Damages:
Acres: Fee - 108 acres Easement - 160 acres

JUSTIFICATION: The Black Warrior-Tombigbee Waterway (BWT) is vital to the needs of producers and users of such bulk commodities as coal, iron ore, cement, and petroleum products. Oliver Lock and Dam is the only lock in the BWT system that required multiple locking for the standard 6 barge tows using the system. Modification of this lock will allow the tows to substantially reduce lockage time, which will allow this section of the Waterway to handle more traffic in less time. This will reduce the costs of navigating this portion of the river. Commerce through the Oliver Lock and Dam in 1984 was 15,869,000 tons, an increase of 3,820,000 tons over 1983. There was an increase of 3,200,000 tons in coal, 500,000 tons in iron ore and 120,000 tons in other products. The average annual benefits are $35,600,000, all for navigation.

FISCAL YEAR 1987: The requested amounts will be applied as follows:

Complete Lands and Damages	$ 110,000
Complete Relocations	70,000
Initiate Cofferdam and River Diversion Contract	17,490,000
Complete Right Bank Access Road	30,000
Continue Engineering and Design	1,800,000
Continue Supervision and Administration	1,500,000
Total	$21,000,000

William Bacon Oliver L&D (Replacement), AL

4 FEB 1986

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NON-FEDERAL COST: In accordance with the Agreement between the Administration and the Senate Majority Leadership, 50 percent of the total cost of construction will be derived from the Inland Waterways Trust Fund.

STATUS OF LOCAL COOPERATION: A Local Cooperation Agreement is not required.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $65,000,000 is a decrease of $68,900,000 from the latest estimate ($133,900,000, October 1983) submitted to Congress (FY 1985). This change includes increases of $11,200,000 based on higher price levels to 1 October 1985; $7,100,000 for an estimated inflation allowance from 1 October 1985 through the construction period; a decrease of $2,400,000 for design changes which includes a decrease of ($4,400,000) for relocating the lock. The decrease was partially offset by an increase of ($2,000,000) based on a refinement in quantities due to more detailed design; a decrease of $19,800,000 for a modification based on the deletion of hydropower; and a decrease of $65,000,000 which is based on one-half of the total project cost being funded by the Inland Waterways Trust Fund.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: A Final Environmental Impact Statement (EIS) was included in the Interim Feasibility Report which was reviewed by the Board of Engineers for Rivers and Harbors in December 1983. The EIS was filed with the Environmental Protection Agency (EPA) in June 1984.

The Provisions of Section 404 of the Clean Water Act are scheduled to be met by a Section 404(b)(1) Evaluation in the 2nd quarter of FY 1986; a Public Notice issued in the 2nd quarter of FY 1986; a Certification from the State of Alabama in the 3rd quarter of FY 1986, and the District Commander's signature on the Finding of Compliance in the 3rd quarter of FY 1986.

OTHER INFORMATION: Funds to initiate Continuation of Planning and Engineering were appropriated in FY 1984. Funds to initiate construction were appropriated in FY 1985.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Mobile

Project: William Bacon Oliver Lock and Dam, Alabama

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	133,900 (Oct 83)		133,900 (Oct 83)		65,000 1/ (Oct 85)
Reason for Change				(-68,900)1/	
a. Price Escalation				18,165	
b. Design Changes				-2,400 2/	
c. Additional Function Added General Authorization					
d. Authorized Modification				-19,800 3/	
e. Post-Contract Award and Other Estimating Adjustments					
f. Schedule Changes					
g. Sundry				-65,000 4/	
h. Real Estate				135	

NOTE:
1/ Includes ($7,100,000) allowance for estimated inflation from 1 October 1985 through the constructing period.
2/ Decrease ($4,400,000) based on relocating the lock and an increase ($2,000,000) based on a refinement in quantities due to more detailed design.
3/ Decrease ($19,800,000) due to deletion of hydropower.
4/ Decrease ($65,000,000) based on one-half of the total project being paid by the Inland Waterways Trust Fund.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: Locks and Dams

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 1986 AND 19 87

LP NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	LANDS AND DAMAGES	1,100,000		2,990,000	110,000	
2	RELOCATIONS	120,000		50,000	70,000	
3	DAMS	22,000,000			8,390,000	13,610,000
4	LOCKS	81,040,000			9,000,000	72,040,000
5	ROADS	700,000		570,000	130,000	
6	CHANNELS AND CANALS	10,400,000				10,400,000
7	CULTURAL RESOURCES	70,000		70,000		
8	BUILDINGS, GROUNDS, & UTILITIES	360,000				360,000
9	PERMANENT OPERATION EQUIPMENT	1,040,000				1,040,000
10	ENGINEERING AND DESIGN	4,870,000		1,420,000	1,800,000	1,650,000
11	SUPERVISION AND ADMINISTRATION	6,300,000		500,000	1,500,000	4,300,000
12						
13	TOTAL APPLIED COST (CofE AND INLAND					
14	WATERWAY TRUST FUNDS	130,000,000		5,600,000	21,000,000	103,400,000
15	UNDISTRIBUTED COSTS - NONE					
16	TOTAL PROJECT COST (CofE AND INLAND					
17	WATERWAY TRUST FUNDS)	130,000,000		5,600,000	21,000,000	103,400,000
18	PENDING ADJUSTMENT - NONE					
19	TOTAL COST (CofE AND INLAND WATERWAY					
20	TRUST FUNDS)	130,000,000		5,600,000	21,000,000	103,400,000
21	UNDELIVERED ORDERS					
22	TOTAL OBLIGATIONS			5,600,000	21,000,000	103,400,000
23						
24	FEDERAL FUNDS					
25	GENERAL APPROPRIATION					
26	TOTAL COST	65,000,000		4,067,000	10,500,000	50,433,000
27	UNDELIVERED ORDERS					
28	TOTAL OBLIGATIONS			4,067,000	10,500,000	50,433,000
29						
30	INLAND WATERWAY TRUST FUND					
31	TOTAL COST	65,000,000		1,533,000	10,500,000	52,967,000
32	UNDELIVERED ORDERS					
33	TOTAL OBLIGATIONS			1,533,000	10,500,000	52,967,000

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 Jan 86	South Atlantic	South Atlantic-Gulf	William Bacon
	DISTRICT Mobile	BASIN Tombigbee-Warrior River	Oliver L&D (Replacement), AL

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION:

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	METHOD OF FINANCING					
2	GENERAL APPROPRIATION					
3	ALLOCATIONS	65,000,000	1,002,000	3,065,000		
4	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			1,002,000		
5	TOTAL FUNDS AVAILABLE FOR OBLIGATION			4,067,000		
6	APPROPRIATION REQUIRED				10,500,000	50,433,000
7						
8	INLAND WATERWAY TRUST FUND	65,000,000				
9	ALLOCATIONS			1,533,000		
10	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			-		
11	TOTAL FUNDS AVAILABLE FOR OBLIGATION			1,533,000		
12	APPROPRIATION REQUIRED				10,500,000	52,967,000
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EFFECTIVE DATE	DIVISION / DISTRICT	REGION / BASIN	PROJECT
1 Jan 86	South Atlantic / Mobile	South Atlantic-Gulf / Tombigbee-Warrior River	William Bacon Oliver L&D (Replacement), AL

ENG FORM 1 SEP 70 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

4 FEB 1986

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APPROPRIATION TITLE: Construction, General • Channels and Harbors (Navigation)

PROJECT: Canaveral Harbor, Florida (Continuing)

LOCATION: The Harbor is located on the east coast of Florida in Canaveral Bight, about 146 miles south of the entrance to Jacksonville Harbor and 69 miles north of the entrance to Fort Pierce Harbor.

AUTHORIZATION: River and Harbor Act of 1962.

BENEFIT•COST RATIO: The remaining benefit•remaining cost ratio is not applicable because monetary benefits have not been quantified in accordance with Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost (C of E)
Estimated Federal Cost (Corps of Engineers)		$26,300,000	
Estimated Federal Cost (NASA)		700,000	
Estimated Federal Cost (U.S. Coast Guard)		85,000	
Estimated Non•Federal Cost		4,354,000	
Cash Contribution	$ 215,000		
Other	3,059,000		
Diking	1,080,000		
Total Estimated Project Cost		$31,439,000	
Allocations to 30 September 1985		9,962,000	
Conference Allowance FY 1986		2,300,000	
Allocation for FY 1986		2,300,000	
Allocations to Date		12,262,000	47
Allocation Requested for FY 1987		3,100,000	58
Scheduled Balance to Complete After FY 1987		0	
Unscheduled Balance to Complete After FY 1987		10,938,000	

STATUS (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE 1/
Locks		
Fill, Waterlines, Flagpole, etc.	100	Mar 1966
Lock A•2•1	100	Oct 1965
Channels and Canals		
Barge Canal	100	Aug 1965
Harbor Ext. Mi 1.2 to Mi 1.5	100	Sep 1974
Harbor Ext. Mi 1.5 to Mi 2.3	0	Feb 1987
Levees and Floodwalls		
Levee, Dike, Relocation	100	
Beach Replenishment		
Sand Transfer Facilities	0	Unscheduled 1/
Entire Project	80	Feb 1987 1/

1/ Remaining work is not scheduled pending determination of need.

1276

Division: South Atlantic

District: Jacksonville

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Region: South Atlantic•Gulf
Canaveral Harbor, Florida

PHYSICAL DATA

Entrance channel 44 feet deep, and turning basin 35 feet deep; a perimeter dike of about 4,000 feet; a barge channel 12 feet deep and 125 feet wide from the turning basin to the Intracoastal Waterway; and a barge lock with dimensions of 90 feet wide and 400 feet long.

JUSTIFICATION: Development and operation of the Rocket-Launching Facility on Cape Kennedy and the development of Patrick Air Force Base, 10 miles south of Canaveral Harbor, and tracking stations on islands offshore have resulted in a population increase in the tributary area from 162,000 in 1940 to about 570,000 in 1980. During the 1960's, there was a major expansion of the Rocket-Launching Facility on Cape Kennedy to accommodate the space program. Commerce for the harbor was 2,285,000 tons in 1983. Completion of the westerly harbor extension is considered essential to provide adequate facilities for prospective commerce, particularly importation of coal for energy generation.

Breakdown of average annual benefits:

Item	Amount (1 Oct 1985)
Navigation	$ 6,578,000
Beach Erosion	1,405,000
TOTAL	$ 7,983,000

FISCAL YEAR 1987: The requested amount will be applied as follows:

Complete Harbor Extension - Mi 1.5 to Mi 2.3	$ 2,974,000
Engineering and Design	37,000
Supervision and Administration	89,000
TOTAL	$ 3,100,000

COMPLETED MODIFICATIONS: A 35-foot-deep turning basin near the easterly shore of Banana River, enclosed by a dike; an entrance channel, 44 by 300 feet, extending from the turning basin to deep water in Canaveral Bight, protected at its seaward entrance by jetties to the 12-foot depth contour; a barge canal 12 by 125 foot from the turning basin to the Intracoastal Waterway; and a lock 90 by 400 feet on the barge canal.

Canaveral Harbor, Florida

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NON-FEDERAL COST: The estimated cost to the local sponsor, the Canaveral Port Authority, of complying with the requirements of local cooperation for construction of the project as set forth by the authorizing legislation is $4,354,000, including an adjustment in the estimated inflation allowance through the construction period. Local interests are required to provide land easements and rights-of-way and to provide a local cash contribution currently estimated at $215,000. Non-Federal cost is broken down as follows:

Other	$ 3,059,000
Cash Contribution	215,000
Diking	1,080,000
TOTAL	$ 4,354,000

STATUS OF LOCAL COOPERATION: The Canaveral Harbor Authority is the local sponsor. A Local Assurances Agreement pursuant to Section 221 of the River & Harbor & Flood Control Act of 1970 (PL 91-611) was signed by the local sponsor on November 21, 1985 and accepted by the District Engineer on December 11, 1985.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $26,300,000 is an increase of $500,000 over the latest estimate ($25,800,000) submitted to Congress (FY 1984). This change includes an increase of $475,000 for adjustments in the estimated inflation allowance through the construction period and an increase of $25,000 for recomputation of the Federal cost.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: A Final Supplemental EIS was filed with the EPA on October 30, 1985. The provisions of Section 404(b) were met with the issuance of a Water Quality Certification by the State of Florida on February 17, 1984.

OTHER INFORMATION: Funds to initiate preconstruction planning for the 1962 authorization were appropriated in FY 1963 and initial construction funds were appropriated in FY 1964. Harbor extension from Mi. 1.2 to Mi. 1.5 was completed in September 1974. Planning funds to enlarge harbor from Mi. 1.5 to Mi. 2.3 were appropriated in FY 1982.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Jacksonville

Project: Canaveral Harbor, Florida

Item	Estimates Presented to Congress ($1,000) Original Baseline	Cumulative Changes	Last	Incremental Change	Current
Federal Cost (Price Level)	7,919 (Jul 1961)		25,800 2/ (Oct 1984)		26,300 1/2/ (Oct 1985)
Reason for Change		(17,881)2/		(500)1/	
a. Price Escalation		15,386		475	
b. Design Changes		2,814			
c. Additional Functions Added Under General Authority					
d. Authorized Modifications		60			
e. Post-Contract Award and Other Estimating Adjustments		-496		25 3/	
f. Schedule Changes					
g. Sundry		117			
h. Real Estate					

NOTE: 1/ Includes an increase of $475 for adjustments in the estimated inflation allowance through the construction period.
2/ Includes an allowance for estimated inflation through the construction period.
3/ Increase of $25 for recalculation of Federal cost.

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REPORTS CONTROL SYMBOL DAEN-CWB-E

APPROPRIATION TITLE: CONSTRUCTION GENERAL			CLASSIFICATION: Channels & Harbors (Navigation Project)			
SUMMARY CONSTRUCTION PROGRAM (PB-1) FISCAL YEARS 19 86 AND 19 87						
LINE NO.	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Locks	2,601,000	2,601,000	-	-	-
2	Roads	1,037,000	1,037,000	-	-	-
3	Channels & Canals	9,421,000	898,000	5,500,000	3,023,000	-
4	Levees & Floodwalls	660,000	660,000	-	-	-
5	Beach Replenishment	9,819,000	-	-	-	9,819,000
6	Engineering & Design	1,748,000	1,215,000	100,000	37,000	396,000
7	Supervision & Administration	1,229,000	234,000	181,000	91,000	723,000
8						
9	Total Applied Cost (Fed & Non-Fed)	26,515,000	6,645,000	5,781,000	3,151,000	10,938,000
10	Undistributed Costs (None)					
11	Total Project Cost (Fed & Non-Fed)	26,515,000	6,645,000	5,781,000	3,151,000	10,938,000
12	Pending Adjustments (None)					
13	Total Cost (Fed & Non-Fed)	26,515,000	6,645,000	5,781,000	3,151,000	10,938,000
14	Undelivered Orders		(+) 28,000	(-) 28,000		
15	Total Obligations		6,673,000	5,753,000	3,151,000	10,938,000
16						
17	Federal Funds					
18	Total Applied Cost	26,300,000	6,582,000	5,680,000	3,100,000	10,938,000
19	Undistributed Cost (None)					
20	Total Project Cost	26,300,000	6,582,000	5,680,000	3,100,000	10,938,000
21	Pending Adjustments (None)					
22	Total Cost	26,300,000	6,582,000	5,680,000	3,100,000	10,938,000
23	Undelivered Orders		(+) 28,000	(-) 28,000		
24	Total Obligations		6,610,000	5,652,000	3,100,000	10,938,000
25						
26	Non-Federal Funds					
27	Total Applied Cost	215,000	63,000	101,000	51,000	-
28	Undistributed Cost (None)					
29	Total Project Cost	215,000	63,000	101,000	51,000	-
30	Pending Adjustments (None)					
31	Total Cost	215,000	63,000	101,000	51,000	-
32	Undelivered Orders (None)					
33	Total Obligations		63,000	101,000	51,000	-

EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC	SOUTH ATLANTIC-GULF	CANAVERAL HARBOR, FLORIDA
	DISTRICT: JACKSONVILLE	BASIN: ST. JOHNS	

ENG FORM 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

4 FEB 1986 1280

REPORTS CONTROL SYMBOL

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: Channels & Harbors (Navigation Project)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LN	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
NO	(a)	(b)	(c)	(d)	(e)	(f)
1	Method of Financing					
2	Federal Funds					
3	Allocations	26,300,000	9,962,000	2,300,000		
4	Unobligated Carryover from Prior Yr			3,352,000		
5	Total Funds Available for Obligation			5,652,000		
6	Appropriation Required				3,100,000	10,938,000
7						
8	Non-Federal Funds					
9	Contribution	215,000	63,000	101,000		
10	Unobligated Carryover from Prior Year					
11	Total Funds Available for Obligation			101,000		
12	Contribution Required				51,000	-
13	Other Costs	4,139,000	909,000	1,615,000	1,615,000	-
14	Total Non-Federal Costs	4,354,000	972,000	1,716,000	1,666,000	-
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EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC	SOUTH ATLANT.C-GULF	CANAVERAL HARBOR, FLORIDA
	DISTRICT: JACKSONVILLE	BASIN: ST. JOHNS	

ENG FORM 6 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

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APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Tampa Harbor, Branch Channels, Florida (Continuing)

LOCATION: Tampa Harbor is located about midway along the Gulf Coast of Florida in Tampa and Hillsborough Bays. The Gulf entrance is about 330 miles southeast of Pensacola Harbor and 220 miles north of Key West Harbor. The Branch Channels consist of Hillsborough Bay Cut D, Sparkman Channel, Port Tampa Channel and Ybor Channel, and existing turning basins at the entrance to Ybor Channel and at Port Tampa.

AUTHORIZATION: River and Harbor Act of 1970 and Supplemental Appropriations Act of 1985.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 2.5 to 1 at 8 1/8 percent. The benefit cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 2.5 to 1. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost (C of E)
Estimated Total Appropriation Requirement		$42,800,000	
Estimated Federal Cost (U.S. Coast Guard)		425,000	
Future Non-Federal Reimbursement	$ 5,710,000		
Estimated Federal Cost (Ultimate)		37,515,000	
Estimated Non-Federal Cost		20,408,000	
Reimbursement	$ 5,710,000		
Cash contribution	14,300,000		
Other Costs	398,000		
Total Estimated Project Cost		$57,923,000	
Allocations to 30 September 1985		525,000	
Conference Allowance for FY 1986		465,000	
Potential Allocation for FY 1986		410,000 1/	
Potential Allocation through FY 1986		975,000	2
Allocation Requested for FY 1987 2/		7,400,000	20
Scheduled Balance to Complete After FY 1987		34,465,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Construction Not Started		
CHANNELS & CANALS		
Hillsborough Bay Cut D, Ybor & Sparkman Channels - Section 6	0	Mar 1988
Port Tampa Channels & Turning Basin - Section 7	0	Mar 1991
ENTIRE PROJECT	0	Mar 1991

1/ Reflects $15,000 reduction assigned as saving and slippage and transfer of $40,000 from the project.

2/ Obligation and expenditure of budgeted funds for construction of this project are contingent upon enactment of legislation enabling recovery of all or part of the costs to be expended by the project sponsor and the Federal Government in accordance with the agreement between the Administration and the Senate Majority Leadership.

Division: South Atlantic District: Jacksonville Region: South Atlantic-Gulf

Tampa Harbor, Branch Channels, Florida

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PHYSICAL DATA

Enlarging Hillsborough Bay Cut D, Sparkman Channel, Port Tampa Channel and existing turning basins at the entrance to Ybor Channel and at Port Tampa, all to a depth of 41 feet with varying length and widths and deepening Ybor Channel to a depth of 39 feet.

JUSTIFICATION: The city's terminals and port facilities serve as the commercial hub for this region with highway and railway networks extending through and beyond the tributary area. Water borne commerce of the area passes through the terminals of Tampa Harbor in both foreign and domestic movements. Total volume through the port represents about one-half of the total volume through all deepwater ports in the State. Commerce on the Branch Channels was about 14 million tons in 1983 for petroleum products, sulphur and coal, and is estimated to exceed 35 million tons by 2030. Most of the commerce on the Branch Channels in 1983 was on ships whose drafts exceed the safe navigational capability of those channels. By 2030 all oceangoing, deepdraft ships carrying petroleum products or sulphur are expected to be on ships with drafts exceeding those considered safe for navigability on Tampa Harbor's Branch Channels; the average annual benefits for the project, all navigation, are estimated at $23,682,000 at 1 October 1985 price levels.

FISCAL YEAR 1987: The requested amount will be applied as follows:

Initiate construction of Hillsborough Bay Cut D, Ybor & Sparkman Channels - Section 6	$ 7,275,000
Engineering & Design	0
Supervision & Administration	125,000
TOTAL	$ 7,400,000

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NON-FEDERAL COST: Consistant with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and material disposal areas presently estimated at $398,000; and pay 25 percent of the costs allocated to deep draft navigation during construction, presently estimated at $14,300,000; and pay an additional 10 percent of the costs allocated to deep draft navigation within a period of 30 yeras following completion, presently estimated at $5,710,000. Non-Federal cost is as follows:

Reimbursement	$ 5,710,000
Relocations	398,000
Cash Contribution	14,300,000
TOTAL	$ 20,408,000

STATUS OF LOCAL COOPERATION: A Local Cooperation Agreement will be executed by June 30, 1986.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $42,800,000, is a decrease of $7,200,000 over the latest estimate ($50,000,000) submitted to Congress (FY 1985). This decrease includes an increase of $5,200,000 for adjustments in the estimated inflation allowance through the construction period and a decrease of $12,400,000 for adjustment of Federal and non-Federal responsibilities.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final EIS was filed with CEQ in November 1971. An updated final statement was filed with CEQ on 18 July 1975, and the final supplement was filed on 7 June 1977. The provisions of Section 404 of the Clean Water Act have been met by a Section 404 Evaluation Report signed by the District Engineer on 9 June 1977 for the District files which was prior to the 27 December 1977 enactment date of the Clean Water Act of 1977. A Supplemental Information Report will be submitted in April 1986 to cover changes in disposal methods.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1979. Preconstruction planning is scheduled to be completed in June 1986.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Jacksonville

Project: Tampa Harbor, Branch Channels, Florida

	Estimates Presented to Congress ($1,000)				
	Original Baseline	Cumulative Changes	Last	Incremental Change	Current
Federal Cost (Price Level)	50,000 (Oct 1983)		50,000 (Oct 1983)		42,800 (Oct 1985) 1/
Reason for Change					
a. Price Escalation		0		(-7,200) 1/	
b. Design Changes		0		5,200	
c. Additional Function Added Under General Authorization		0		0	
d. Authorized Modification		0		0	
e. Post-Contract Award and Other Estimating Adjustments		0		0	
f. Schedules Changes		0		0	
g. Sundry		0		-12,400 2/	
h. Real Estate		0		0	

NOTE 1/ Includes $3,400 allowance for estimated inflation from 1 October 1985 through the construction period.
2/ Decrease of $12,400 for adjustment of Federal and non-Federal responsibility.

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REPORTS CONTROL SYMBOL DAEN-CWB-E

APPROPRIATION TITLE: CONSTRUCTION,GENERAL | CLASSIFICATION: Channels & Harbors (Navigation Project)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LN NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Channels & Canals	54,411,000	-	-	9,700,000	44,711,000
2	Engineering & Design	1,727,000	321,000	614,000	300,000	492,000
3	Supervision & Administration	962,000	-	-	192,000	770,000
4						
5	Total Applied Cost (Fed & Non-Fed)	57,100,000	321,000	614,000	10,192,000	45,973,000
6	Undistributed Costs (None)					
7	Total Project Cost (Fed & Non-Fed)	57,100,000	321,000	614,000	10,192,000	45,973,000
8	Pending Adjustments (None)					
9	Total Cost (Fed & Non-Fed)	57,100,000	321,000	614,000	10,192,000	45,973,000
10	Undelivered Orders		(+) 106,000	(-) 106,000		
11	Total Obligations		427,000	508,000	10,192,000	45,973,000
12						
13	Federal Funds					
14	Total Applied Cost	42,800,000	241,000	460,000	7,644,000	34,455,000
15	Undistributed Cost (None)					
16	Total Project Cost	42,800,000	241,000	460,000	7,644,000	34,455,000
17	Pending Adjustment (None)					
18	Total Cost	42,800,000	241,000	460,000	7,644,000	34,455,000
19	Undelivered Orders		(+) 106,000	(-) 106,000		
20	Total Obligations		347,000	354,000	7,644,000	34,455,000
21						
22	Non-Federal Funds					
23	Total Applied Cost	14,300,000	80,000	154,000	2,548,000	11,518,000
24	Undistributed Cost (None)					
25	Total Project Cost	14,300,000	80,000	154,000	2,548,000	11,518,000
26	Pending Adjustments (None)					
27	Total Cost	14,300,000	80,000	154,000	2,548,000	11,518,000
28	Undelivered Orders (None)					
29	Total Obligations		80,000	154,000	2,548,000	11,518,000
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC DISTRICT JACKSONVILLE	SOUTH ATLANTIC-GULF @BASIN SOUTHERN FLORIDA	TAMPA HARBOR, FLORIDA, BRANCH CHANNELS

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

4 FEB 1986 1286

REPORTS CONTROL SYMBOL

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: Channels & Harbors (Navigation Project)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Method of Financing					
2	Federal Funds					
3	Allocations	42,800,000	525,000	410,000 1/		
4	Unobligated Carryover from Prior Yr			98,000		
5	Total Funds Available for Obligation			508,000		
6	Appropriation Required				7,400,000	34,465,000
7						
8	Non-Federal Funds					
9	Contribution	14,300,000				
10	Unobligated Carryover from Prior Yr					
11	Total Funds Available for Obligation					
12	Contribution Required				2,792,000	11,508,000
13	Relocations	398,000	200,000			198,000
14	Total Non-Federal Costs	14,698,000	200,000		2,792,000	11,706,000
15						
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21	1/ Reflects $15,000 reduction assigned as Savings & Slippage and					
22	$40,000 transfer from the project.					
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EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC	SOUTH ATLANTIC-GULF	TAMPA HARBOR, FLORIDA, BRANCH CHANNELS
	DISTRICT: JACKSONVILLE	BASIN: SOUTHERN FLORIDA	

ENG FORM 2260 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

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APPROPRIATION TITLE: Construction General - Channels and Harbors (Navigation)

PROJECT: Savannah Harbor Widening, Georgia (Continuing)

LOCATION: Savannah Harbor, Georgia is located in Chatham County, Georgia on the South Atlantic Coast 75 statute miles south of Charleston Harbor, South Carolina, and 120 miles north of Jacksonville Harbor, Florida.

AUTHORIZATION: Supplemental Appropriation Act of 1985.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 1.5 to 1 at 8 1/8 percent. The benefit to cost ratio for Fiscal Year for which Congress appropriated initial construction funds (FY 1985) was 1.5 to 1. The benefit to cost is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

			Accum % of Est. Fed.Cost(C of E)
Estimated Federal Cost (Corps of Engineers)		$8,235,000	
Estimated Non-Federal Cost		6,415,000	
Cash Contributions	($2,771,000)		
Other	($3,644,000)		
		$14,650,000	
Allocations to 30 September 1985		$ 15,000	
Conference Allowance for FY 1986		0	
Potential Allocation for FY 1986		535,000	
Potential Allocation thru FY 1986		550,000 1/	7
Allocation Requested for FY 1987		3,200,000	46
Scheduled Balance to Complete after FY 1987		4,485,000	
Unscheduled Balance to Complete after FY 1987		0	

STATUS:(1 Jan 1986)	PERCENT COMPLETE	COMPL. SCHED.
Relocations	9	Jul 1987
Disposal Area Construct.	0	Jul 1987
Channel Dredging	0	Dec 1987

1/ Obligations and expenditure of budgeted funds for construction of this project are contingent upon enactment of legislation enabling recovery of all or part of the cost to be expended by the project sponsor and the Federal Government. Consistent with cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

PHYSICAL DATA

Widened Channel (Fig Island Turning Basin to Kings Island Turning Basin)	500 ft.
Length of widened channel	29,570 ft. (5.6 mi.)
New Construction Dredged Material	2,460,000 c.y.

DIVISION: South Atlantic

DISTRICT: Savannah

REGION: South Atlantic - Gulf
Savannah Harbor Widening, Georgia

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JUSTIFICATION: The increased density of shipping traffic in the upper harbor is creating a serious hazard due to the narrowness of the channel. Because of the restrictions of this narrow channel, vessel speeds must be reduced and tug assistance is required. This results in increased transit time and costs for those vessels which must navigate this portion of the harbor. Since 93 percent of the vessels that call at Savannah Harbor enter this portion of the harbor, the speed reduction and tug assistance affect most of the harbor's commerce.

Engineering studies and comparative cost studies indicate that widening the navigation channel from 400 to 500 feet between Fig Island Turning Basin and Kings Island Turning Basin is the most suitable and economical method for reducing transportation costs due to reduced vessel speeds and tug assistance. The widened channel would also improve operational safety in Savannah Harbor. The average annual benefits are $1,874,400; all for navigation.

FISCAL YEAR 1987: The requested Federal Amount of $3,200,000 will be applied as follows:

Initial Dredging: Fig Island Turning Basin to Kings Island Turning Basin		$2,705,000
Engineering and Design		195,000
Supervision and Administration		300,000
	TOTAL	$3,200,000

NON-FEDERAL COSTS - Consistent with the cost-sharing and finaacing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and required disposal areas, presently estimated at $3,644,000, and pay 10% of the incremental costs down to 20 feet, and 25% of the incremental costs between 20 feet and 45 feet allocated to deep draft navigation during construction, presently estimated at $2,771,000. Local interests have also agreed to make all required payments and voluntary contributions concurrently with project construction.

STATUS OF LOCAL COOPERATION: By letter dated 16 August 1976, the local sponsor stated its intent to fulfill the proposed requirements of local cooperation voluntarily cost-sharing 50 percent of the Federal cost of the project. On 26 October 1984 the local sponsor signed a letter of intent to participate in this voluntary cost-sharing. In its letter of intent, the local sponsor made its participation in the voluntary 50 percent cost-sharing of Federal costs contingent upon affirmative Congressional authorization of the cost-sharing provisions for Savannah Harbor widening and that these cost-sharing provisions conform to legislation to be added mandating cost-sharing provisions for harbors nationwide. Local assurers have verbally stated they feel the same way, if asked to cost-share 25 percent of the Federal costs. A local cooperation agreement will be executed prior to 30 June 1986.

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COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $8,235,000 is an increase of $885,000 over the latest estimate of $7,350,000 submitted to Congress (FY 1985). This change includes an increase of $2,732,000 due to a change in the proposed cost-share requirements and includes an allowance for inflation through the construction period. This increase is partially offset by a decrease of -$1,847,000 due to a reduction in the amount of material to be dredged.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final EIS filed with EPA March 1981. The provisions of Section 404 of the Clean Water Act have been met with the submission of a Section 404 Evaluation Report in March 1981.

OTHER INFORMATION: A ship simulator study will be completed during FY 1986.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Savannah

Project: Savannah Harbor Widening, Georgia

Estimates Presented to Congress ($1,000)

	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	$7,350 1/ (Oct 83)		$7,350 1/ (Oct 83)		$ 8,235 1/ (Oct 85)
Reason for Change				($ 885)	
a. Price Escalation					
b. Design Changes					
c. Additional Function Added Under General Authorizaiton				2,732 2/	
d. Authorized Modification					
e. Postcontract Award and Other Estimating Adjustments				1,847 3/	
f. Schedule Changes					
g. Sundry					
h. Real Estate					

1/ Includes an allowance for estimated inflation through the construction period.

2/ $2,732 increase due to change in proposed cost-share requirements.

3/ $1,847 decrease due to amount of material to be dredged reduced by approximately 500,000 cubic yards, with the construction of two emergency bend wideners within the project area in 1984.

Savannah Harbor Widening, Georgia

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REPORTS CONTROL SYMBOL DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION PROJECT)

SUMMARY CONSTRUCTION PROGRAM (PB 1)

FISCAL YEARS 19 86 AND 19 87

LINE NO.	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	CHANNELS	9,588,000			5,040,000	4,548,000
2	ENGINEERING AND DESIGN	810,000		550,000	260,000	
3	SUPERVISION AND ADMINISTRATION	608,000			400,000	208,000
4	TOTAL APPLIED COST (FED & NON-FED)	11,006,000		550,000	5,700,000	4,756,000
5	Undistributed Costs (None)					
6	TOTAL PROJECT COST (FED & NON-FED)	11,006,000		550,000	5,700,000	4,756,000
7	Pending Adjustments (None)					
8	TOTAL COST (FED & NON-FED)	11,006,000		550,000	5,700,000	4,756,000
9	Undelivered Orders					
10						
11	TOTAL OBLIGATIONS					
12						
13	FEDERAL FUNDS					
14	TOTAL APPLIED COST	8,235,000		550,000	3,200,000	4,485,000
15	Undistributed Costs (None)					
16	TOTAL PROJECT COST	8,235,000		550,000	3,200,000	4,485,000
17	Pending Adjustments (None)					
18	TOTAL COST	8,235,000		550,000	3,200,000	4,485,000
19	Undelivered Orders					
20	TOTAL OBLIGATIONS			550,000	3,200,000	4,485,000
21						
22	NON-FEDERAL FUNDS					
23	TOTAL APPLIED COSTS	2,771,000			2,500,000	271,000
24	Undistribued Costs (None)					
25	TOTAL PROJECT COST	2,771,000			2,500,000	271,000
26	Pending Adjustments (None)					
27	TOTAL COST	2,771,000			2,500,000	271,000
28	Undelivered Orders					
29	TOTAL OBLIGATIONS				2,500,000	271,000
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION / DISTRICT	REGION / BASIN	PROJECT
1 Jan 86	SOUTH ATLANTIC / SAVANNAH	SOUTH ATLANTIC-GULF / SAVANNAH RIVER	SAVANNAH HARBOR WIDENING, GA

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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REPORTS CONTROL SYMBOL DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION PROJECT)

SUMMARY CONSTRUCTION PROGRAM (PB 1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	METHOD OF FINANCING					
2	FEDERAL FUNDS	8,235,000				
3	Allocations		15,000	535,000		
4	Unobligated Carryover from Prior Year			15,000		
5	Total Funds Available for Obligation			550,000		
6	Appropriations Required				3,200,000	4,485,000
7	NON-FEDERAL FUNDS					
8	Contributions	2,771,000				
9	Unobligated Carryover from Prior Year					
10	Total Funds Available for Obligation					
11	Contribution Required				2,500,000	271,000
12						
13	Lands and Damages and Disposal Areas	3,644,000		3,644,000		
14						
15	Total Non-Federal Cost	6,415,000		3,644,000	2,500,000	271,000
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EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 Jan 86	SOUTH ATLANTIC	SOUTH ATLANTIC-GULF	SAVANNAH HARBOR WIDENING, GA
	DISTRICT SAVANNAH	BASIN SAVANNAH RIVER	

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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APPROPRIATION: Construction, General - Channels and Harbors (Navigation)

PROJECT: Gulfport Harbor, Mississippi (Continuing)

LOCATION: Gulfport Harbor is located on the Gulf Coast, at Gulfport, in Harrison County, Mississippi; about midway between New Orleans, Louisiana and Mobile, Alabama. The deep draft ship channel runs southward from Gulfport through Mississippi Sound into deep water in the Gulf of Mexico.

AUTHORIZATION: Supplemental Appropriations Act of 1985.

BENEFIT-TO-COST RATIO: The remaining benefit-remaining cost ratio is 1.05 to 1 at 8 1/8 percent. The benefit-to-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 1.03 to 1. The benefit-to-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

			ACCUM. PCT. OF ESTMTD. COST
Estimated Appropriation Requirement (CofE)		$36,900,000	
Estimated Appropriation Requirement (U.S.C.G.)		50,000	
Estimated Total Appropriation Requirement		$36,950,000	
Future Non-Federal Reimbursement	$4,920,000		
Estimated Federal Cost (Ultimate)		32,030,000	
Estimated Non-Federal Cost		17,420,000	
Cash Contributions	12,300,000		
Other Costs	200,000		
Reimbursement: Navigation	4,920,000		
Total Estimated Project Cost		$49,450,000	
Allocations to 30 September 1985		$ 15,000	
Conference Allowance for FY 1986		0	
Potential Allocation for FY 1986		685,000	
Potential Allocations through FY 1986		700,000	2
Allocation Requested for FY 1987		600,000 1/	4
Scheduled Balance to Complete after FY 1987		35,400,000	
Unscheduled Balance to Complete after FY 1987		0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Construction not started		
Channels and Canals	0	Jun 91
Entire Project	0	Jun 91

1/ Obligation and expenditure of budgeted funds for construction of this project are contingent upon enactment of legislation enabling recovery of all or part of the costs to be expended by the project sponsor and the Federal Government in accordance with the Agreement between the Administration and the Senate Majority Leadership.

Division: South Atlantic District: Mobile Region: South Atlantic - Gulf
Gulfport Harbor, MS

4 FEB 1986

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PHYSICAL DATA

The proposed plan of improvement is to enlarge the existing entrance channel to provide a depth of 38 feet and a width of 400 feet from the 38-foot depth contour in the Gulf of Mexico for a distance of about 9.1 miles to a point in Mississippi Sound near the western end of Ship Island; enlarge the channel through Mississippi Sound to a depth of 36 feet and a width of 300 feet for a distance of about 11.8 miles between the inner end of the gulf entrance channel and the anchorage basin at Gulfport; realign the ship channel through Ship Island Pass to a location generally parallel to and about 1,000 feet west of that presently authorized, with a deposition basin for littoral drift 38 feet deep, 300 feet wide, and 2,000 feet long adjacent to the east side of the channel at the west end of Ship Island; and enlarge and adjust the dimensions of the anchorage basin and channel entrance by extending the southern limits of the basin southward about 1,180 feet along the west pier and 2,300 feet along the west side of the ship channel, decreasing the width of the anchorage basin from 1,320 feet, as presently authorized, to 1,120 feet, and deepening the basin and the adjusted channel approach to 36 feet.

JUSTIFICATION: Channel deepening and widening, with minor relocation, is required to provide a safe and efficient harbor for the present and anticipated vessel traffic at Gulfport Harbor, Reducing the width of the anchorage basin would provide for dockside berths to be maintained by local interests and enlarging the entrance would reduce hazards resulting from cross currents and improve maneuvering.

The port is presently receiving 230,000 tons annually of ilmenite ore imported from Australia in 40,000 deadweight ton dry bulk carriers with registered drafts of 38 to 52 feet. A deeper channel would allow those vessels to enter more fully loaded with resulting savings in transportation charges. Container vessels must offload elsewhere and enter Gulfport Harbor lightloaded. A deeper channel would permit more fully loaded container vessels and utilization of larger vessels for the 560,000 tons of containerized commerce handled annually. The average annual benefits are $5,052,000, all for navigation.

FISCAL YEAR 1987: The requested amount will be applied as follows:

Engineering and Design	$ 650,000
Supervision and Administration	150,000
Total	$ 800,000

The funds for Fiscal Year 1987 are necessary in order to meet the scheduled completion of July 1988 for the General Design Memorandum.

COMPLETED MODIFICATIONS: The most recent modification by the River and Harbor Act of 30 June 1948 authorized a 32-foot depth and a 300-width across Ship Island Bar, a 30-foot depth and 220-width through Mississippi Sound, and a 30-foot depth in the anchorage basin at Gulfport.

Gulfport Harbor, MS

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REMAINING MODIFICATIONS: None.

NON-FEDERAL COST: Consistent with the cost-sharing and financial concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, utility relocations, required disposal areas, and berthing areas, presently estimated at $200,000; pay 25 percent of the costs allocated to deep draft navigation during construction, presently estimated at $12,300,000, and pay an additional 10 percent of the costs allocated to deep draft navigation within a period of 30 years following completion, with a present value currently estimated at $4,920,000.

STATUS OF LOCAL COOPERATION: The local sponsor is the Mississippi State Port Authority at Gulfport, Mississippi. The sponsor has been advised of the new legislative cost-sharing guidelines. By letter of 7 October 1985, the Mississippi State Port Authority confirmed its vital interest in the Gulfport Harbor and Ship Channel improvements. A Local Cooperation Agreement will be executed prior to 30 June 1986 for project construction with thin layer disposal of all material in the Mississippi Sound.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $36,900,000 is a decrease of $4,030,000 from the latest estimate ($40,930,000, October 1983) submitted to Congress (FY 1985). This change includes an increase of $8,270,000 based on higher price levels to 1 October 1985; $4,800,000 for an estimated inflation allowance from 1 October 1985 through the construction period; and a decrease of $12,300,000 based on cost-sharing requirements for local interest.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH THE CLEAN WATER ACT: The Revised Draft Environmental Impact Statement (RDEIS) was filed with the Council on Environmental Quality of 20 June 1977. An addendum to the RDEIS has been prepared and filed with the Environmental Protection Agency. A Final Environmental Impact Statement will be prepared and filed upon completion of the General Design Memorandum (GDM) scheduled for June 1988.

The provisions for Section 404 of the Clean Water Act are scheduled to be met by a Section 404(b)(1) evaluation in the first quarter, FY 1988; a Public Notice issued in the second quarter, FY 1988; a Certification from the State of Mississippi in the second quarter, FY 1988, and the District Commander's signature on the GDM in the third quarter, FY 1988.

OTHER INFORMATION: None.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Mobile

Project: Gulfport Harbor, Mississippi

Item	Original Baseline (1)	Cumulative Changes (2)	Estimates Presented to Congress ($1,000) Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	40,930 (Oct 83)		40,930 (Oct 83)		36,900 1/ (Oct 85)
Reason for Change				(-4,030) 1/	
a. Price Escalation				8,270	
b. Design Changes					
c. Additional Function Added Under General Authorization					
d. Authorized Modification					
e. Post-Contract Award and Other Estimating Adjustments					
f. Schedule Changes					
g. Sundry					
h. Real Estate				-12,300 2/	

NOTE:
1/ Includes $4,800,000 allowance for estimated inflation from 1 October 1985 through the construction period.
2/ Decrease $12,300,000 based on cost-sharing requirements for local interests.

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REPORTS CONTROL SYMBOL DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Channels and Harbors (Navigation)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	CHANNELS AND CANALS	44,500,000				44,500,000
2	ENGINEERING AND DESIGN	3,100,000		600,000	650,000	1,850,000
3	SUPERVISION AND ADMINISTRATION	1,600,000		100,000	150,000	1,350,000
4						
5	TOTAL APPLIED COST (FED & NON-FED FUNDS)	49,200,000		700,000	800,000	47,700,000
6	Undistributed Cost - None					
7	TOTAL PROJECT COST (FED & NON-FED FUNDS)	49,200,000		700,000	800,000	47,700,000
8	Pending Adjustments - None					
9	TOTAL COST (FED & NON-FED FUNDS)	49,200,000		700,000	800,000	47,700,000
10	Undelivered Orders - None					
11	TOTAL OBLIGATIONS			700,000	800,000	47,700,000
12						
13	FEDERAL FUNDS					
14	TOTAL APPLIED COST	36,900,000		700,000	800,000	35,400,000
15	Undistributed Costs - None					
16	TOTAL PROJECT COST	36,900,000		700,000	800,000	35,400,000
17	Pending Adjustments - None					
18	TOTAL COST	36,900,000		700,000	800,000	35,400,000
19	Undelivered Orders - None					
20	TOTAL OBLIGATIONS			700,000	800,000	35,400,000
21						
22	NON-FEDERAL FUNDS					
23	TOTAL APPLIED COST	12,300,000				12,300,000
24	Undistributed Costs - None					
25	TOTAL PROJECT COST	12,300,000				12,300,000
26	Pending Adjustments - None					
27	TOTAL COST	12,300,000				12,300,000
28	Undelivered Orders - None					
29	TOTAL OBLIGATIONS					12,300,000
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EFFECTIVE DATE: 1 Jan 86

DIVISION: South Atlantic

DISTRICT: Mobile

REGION: South Atlantic-Gulf Coastal Streams

BASIN: Drainage Area

PROJECT: Gulfport Harbor, MS

ENG FORM 2208 (ER 11-2-240) EDITION OF 1 NOV 78 IS OBSOLETE. 4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Channels and Harbors (Navigation)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	METHOD OF FINANCING					
2	FEDERAL FUNDS	36,900,000				
3	Allocations		15,000	685,000		
4	Unobligated Carryover from Prior Year			15,000		
5	Total Funds Available for Obligation			700,000		
6	Appropriations Required				800,000	35,400,000
7						
8	NON-FEDERAL FUNDS					
9	Contributions	12,300,000				
10	Unobligated Carryover from Prior Year					
11	Total Funds Available for Obligation					
12	Contributions Required					12,300,000
13	Other Costs (Dredge Berthing Area)	200,000				200,000
14	TOTAL NON-FEDERAL COSTS	12,500,000				12,500,000
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EFFECTIVE DATE	DIVISION / DISTRICT	REGION / BASIN	PROJECT
1 Jan 86	South Atlantic / Mobile	South Atlantic-Gulf Coastal Streams Drainage Area	Gulfport Harbor, MS

ENG FORM 2208 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Beach Erosion Control Project

PROJECT: Broward County, Florida (Reimbursement)

LOCATION: Broward County is located in the lower east coast of Florida about 300 miles south of Jacksonville and 30 miles north of Miami.

AUTHORIZATION: River and Harbor Act of 1965.

BENEFIT-COST-RATIO: The remaining benefit-remaining cost-ratio is 2.7 to 1 at 3 1/4 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1972) was 2.4 to 1. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost (C of E)
Estimated Federal Cost		$18,500,000	
Estimated Non-Federal Cost		22,400,000	
Cash Contribution	$22,400,000		
Other	0		
Total Estimated Project Cost		$40,900,000	
Allocations to 30 September 1985		$ 11,033,000	
Conference Allowance for FY 86		0	
Allocation for FY 1986		0	
Allocations to Date		11,033,000	60
Allocation Requested for FY 1987		4,000,000	81
Scheduled Balance to Complete After FY 1987		400,000	
Unscheduled Balance to Complete After FY 1987		3,067,000	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE 1/
Beach Replenishment		
Initial Fill		
Hillsboro Inlet to Port Everglades	100	Sep 1970
Port Everglades to South County Line	100	Sep 1977
North County Line to Hillsboro Inlet	0	Unscheduled
Advance Nourishment		
North County Line to Hillsboro Inlet	0	Unscheulded
John U.Lloyd State Park	100	
Mile 2.8 to South County Line	100	Sep 1979
Renourishment		
Hillsboro Inlet to Port Everglades	100	
John U.Lloyd State Park	0	Sep 1986
Remaining Nourishment	0	Unscheulded
Entire Project	42	Oct 1986

1/ For scheduled work only, remaining work is not scheduled pending determination of need.

Division: South Atlantic District: Jacksonville

Region: South Atlantic-Gulf
Broward County, Florida

4 FEB 1986

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PHYSICAL DATA

Beach Replenishment

Initial Restoration ..... 3,385,000 CY

Periodic Nourishment ..... 3,860,000 CY

JUSTIFICATION: Most of the project area ocean shore is highly developed with homes, resort hotels, and motels of the highest quality. The 1980 population of the county was 1,014,043, an increase of 61 percent over the 1970 population of 620,100. Annual tourist visitations are estimated to double the population totals. Recession of much of the ocean shore of Broward County is causing th loss of valuable property. A protective and recreational beach is required to prevent continuing damage to upland developments and to provide adequate recreational area for the tributary population.

Breakdown of average annual benefits:

Item	Amount (1 Oct 85)
Beach erosion control	$ 2,327,000
Recreation	5,207,000
TOTAL	$ 7,534,000

FISCAL YEAR 1987: The requested amount of $4,000,000 will be applied to reimburse local interests for the Federal share of providing renourishment at John U.Lloyd State Park scheduled to be completed by the locals in September 1986.

NON-FEDERAL COST: The estimated cost to the local sponsor, Broward County, of complying with the requirements of local cooperation in construction of the authorized modification as set forth in the authorizing legislation is $22,400,000, including an adjustment in the estimated inflation allowance through the construction period. Non-Federal cost is broken down as follows:

Cash Contribution	$ 22,400,000
TOTAL	$ 22,400,000

Estimated annual maintenance cost is $1,100,200.

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STATUS OF LOCAL COOPERATION: Assurances from the Board of County Commissioners, Broward County, were accepted 22 November 1968. A supplemental agreement for reimbursement was signed by the Secretary of the Army 30 July 1976.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $18,500,000 is an increase of $4,600,000 over the latest estimate ($13,900,000) submitted to Congress (FY 1984). This change includes a decrease of $1,494,000 for adjustments in the estimated inflation allowance through the construction period, a decrease of $231,000 based on favorable bids received; increases of $575,000 for sand tightening the existing jetty and $5,750,000 for beach nourishment at John U. Lloyd State Park due to erosion being greater than anticipated.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH THE CLEAN WATER ACT: Sources of sand for fill are from offshore borrow areas. There is no known opposition to project implementation or unresolved conflict. The local sponsor will prepare the Environmental Assessment and obtain the State Water Quality Certification. The Section 404(b)(1) Evaluation will be based upon the State Water Quality Certification.

OTHER INFORMATION: Construction funds were initially appropriated in Fiscal Year 1972 to reimburse local interests for the Federal share of the Hillsboro Inlet to Port Everglades portion of the project.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Jacksonville

Project: Broward County, Florida

Item	Estimates Presented to Congress ($1,000) Original Baseline	Cumulative Changes	Last	Incremental Change	Current
Federal Cost (Price Level)	2,800 (Jul 1970)		13,900 2/ (Oct 1982)		18,500 1/2/ (Oct 1985)
Reason for Change		(11,100)		(4,600) 1/	
a. Price Escalation		7,876		-1,494	
b. Design Changes		239		-	
c. Additional Functions Added Under General Authority		-		-	
d. Authorized Modifications		-		-	
e. Post-Contract Award and Other Estimating Adjustments		-464		6,094 3/	
f. Schedule Changes		-		-	
g. Sundry		3,449			
h. Real Estate		-		-	

NOTE: 1/ Includes a decrease of $1,494 for the adjustments in the estimated inflation allowance through the construction period.
2/ Includes an allowance for estimated inflation allowance through the construction period.
3/ Increase of $6,904 includes a decrease of $231 based on favorable bids received; increases of $575 for sand tightening the existing jetty and $5,750 for beach renourishment at John U. Lloyd State Park.

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REPORTS CONTROL SYMBOL DAEN-CWB-E

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: Beach Erosion Control Project

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 19 85 AND 19 86

LINE NO.	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
(a)		(b)	(c)	(d)	(e)	(f)
1	Breakwater & Seawalls	600,000	-	-	-	600,000
2	Beach Replenishment	40,300,000	21,401,000	5,925,000	-	12,974,000
3	Total Applied Cost (Fed & Non-Fed)	40,900,000	21,401,000	5,925,000	-	13,574,000
4	Undistributed Costs (None)					
5	Total Project Cost (Fed & Non-Fed)	40,900,000	21,401,000	5,925,000	-	13,574,000
6	Pending Adjustments (None)					
7	Total Cost (Fed & Non-Fed)	40,900,000	21,401,000	5,925,000	-	13,574,000
8	Undelivered Orders (None)					
9	Total Obligations		21,401,000	5,925,000	-	13,574,000
10						
11	Federal Funds					
12	Total Applied Cost	18,500,000	10,983,000	4,050,000	-	3,467,000
13	Undistributed Cost (None)					
14	Total Project Cost	18,500,000	10,983,000	4,050,000	-	3,467,000
15	Pending Adjustments (None)					
16	Total Cost	18,500,000	10,983,000	4,050,000	-	3,467,000
17	Undelivered Orders					
18	Total Obligations		10,983,000	4,050,000	-	3,467,000
19						
20	Non-Federal Funds					
21	Total Applied Cost	22,400,000	10,368,000	1,875,000	-	10,157,000
22	Undistributed Cost (None)					
23	Total Project Cost	22,400,000	10,368,000	1,875,000	-	10,157,000
24	Pending Adjustments (None)					
25	Total Cost	22,400,000	10,368,000	1,875,000	-	10,157,000
26	Undelivered Orders (None)					
27	Total Obligations		10,368,000	1,875,000	-	10,157,000
28						
29						
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC	SOUTH ATLANTIC-GULF	BROWARD COUNTY, FLORIDA
	DISTRICT JACKSONVILLE	BASIN SOUTH FLORIDA	

ENG FORM 6 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

4 FEB 1986

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REPORTS CONTROL SYMBOL DAEN-CWB-E

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Beach Erosion Control Project

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LN NO.	ITEM (a)	PROJECT COST ESTIMATE (b)	TOTAL TO 30 SEP 19 85 (c)	CURRENT FY 19 86 (d)	BUDGET FY 19 87 (e)	BALANCE TO COMPLETE AFTER FY 19 87 (f)
1	Method of Financing					
2						
3	Federal Funds					
4	Allocations	18,500,000	11,033,000			
5	Unobligated Carryover from Prior Year			50,000	50,000	
6	Total Funds Available for Obligation				4,050,000	
7	Appropriation Required				4,000,000	3,467,000
8						
9	Non-Federal Funds					
10	Contributions	22,400,000	10,368,000			
11	Unobligated Carryover from Prior Year					
12	Total Funds Available for Obligation					
13	Contribution Required			5,925,000	(-)4,050,000	10,157,000
14						
15						
16						
17						
18						
19						
20						
21						
22						
23	1/ Reflects $500,000 reduction assigned as Savings & Slippage					
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC	SOUTH ATLANTIC-GULF	BROWARD COUNTY, FLORIDA
	DISTRICT JACKSONVILLE	BASIN SOUTH FLORIDA	

ENG FORM 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

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APPROPRIATION TITLE: Construction, General - Beach Erosion Control Projects

PROJECT: Duval County, Florida (Continuing)

LOCATION: Duval County is located on the upper east coast of Florida within 20 miles of the Florida-Georgia State line. The beach area proposed for improvement lies between the St. Johns River and the Duval-St. Johns County line.

AUTHORIZATION: River and Harbor Act of 1965

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because the initial construction and initial beach nourishment have been completed. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1976) was 2.2 to 1. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost (C of E)
Estimated Federal Cost		$16,000,000	
Estimated Non-Federal Cost		13,978,000	
Cash Contribution	$11,400,000		
Other	2,578,000		
Total Estimated Project Cost		$29,978,000	
Allocations to 30 September 1985		$ 9,419,000	
Conference Allowance for FY 1986		1,500,000	
Allocation for FY 1986		-100,000 1/	
Allocations to Date		9,319,000	58
Allocation Requested for FY 1987		3,200,000	78
Scheduled Balance to Complete After FY 1987		3,481,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Beach Replenishment		
Initial Beach Fill and 4-Yr. Adv. Nourishment: South Jetty to County Line	100	Oct 1980
First Beach Renourishment	28	Sep 1987
Remaining Beach Renourishment	0	Sep 1990
Entire Project	65	Sep 1990

1/ Reflects $200,000 reduction assigned as savings and slippage and transfer of $1,400,000 from the project.

Division: South Atlantic District: Jacksonville Region: South Atlantic-Gulf

4 FEB 1986 1306 Duval County, Florida

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PHYSICAL DATA

Initial Beach Fill ..... 3,750,000 CY
Advance Nourishment ..... 1,040,000 CY
Periodic Nourishment ..... 2,168,000 CY

JUSTIFICATION: The majority of the project shore is a very popular resort area, with substantial summer influxes of seasonal residents and visitors. The Consolidated City of Jacksonville developed a 450-acre full-facility park, Kathryn Abbey Hanna Park, along the 7,800 feet of ocean shore south of and adjacent to Mayport Naval Station. The park has a native plant and wildlife environment fronted by dune formations that is protected by the project.

The shore of Duval County within the project area has been eroded by wave action and ocean currents. Recreational beach space is available only between low and high tides along the majority of the project shore. In 1964, storm damage to the Duval oceanfront amounted to about $4,000,000. A 1962 northeast storm caused $2,580,000 in damages. Neptune and Jacksonville Beaches both suffered over $1,000,000 in damages.

Federal costs for temporary emergency protection and restoration of storm damage at Jacksonville and Neptune Beaches totaled $1,076,000 in March 1963. At these two beaches and Atlantic Beach, additional emergency work costs totaled $1,391,000 in September 1964 and $309,000 at Atlantic Beach in October 1964. Emergency costs to State, county, cities, and private individuals during the storms were substantial.

Since completion of initial construction, there have been 12 "northeasters" and, in September 1979 Hurricane David caused water levels that exceeded design criteria. Two "northeasters" in the Fall of 1981 and 1982, respectively, occurred during the highest peak tides of the year. These storms caused accelerated erosion and recession to the extent that renourishment is required.

Breakdown of average annual benefits:

Item	Amount (FY 1976)
Beach erosion control	$ 515,000
Recreation benefits	1,948,000
Benefits to Federal Navigation	202,000
TOTAL	$ 2,665,000

Duval County, Florida

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FISCAL YEAR 1987: The requested amount will be applied as follows:

Complete first beach renourishment	$ 3,000,000
Engineering and Design	100,000
Supervision and Administration	100,000
TOTAL	$ 3,200,000

NON-FEDERAL COST: The estimated cost to the local sponsor of complying with the requirements of local cooperation for construction of the project is $13,978,000, including an adjustment in the estimated inflation allowance through the construction period. Local interests are required to provide lands, easements, and rights-of-way and a cash contribution: 50 percent of the cost of providing erosion control when the beach is publicly owned or used, 30 percent for parks, and 100 percent of the cost of providing nourishment landward of the beach erosion control line. Non-Federal cost is broken down as follows:

Lands and relocations	$ 2,578,000
Cash contribution	11,400,000
TOTAL	$13,978,000

STATUS OF LOCAL COOPERATION: The written agreement from the local sponsor, the Consolidated City of Jacksonville, required by Section 221 of the Flood Control Act of 1970, was accepted on 29 November 1973 by the Secretary of the Army. A supplemental agreement to the Section 221 Agreement, to change the percentage of local cooperation because of changes in the shorefront ownership, was signed on behalf of the Secretary of the Army on 6 April 1976.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $16,000,000 is an increase of $1,900,000 from the latest estimate ($14,100,000) submitted to Congress (FY 1986). This change includes a decrease of $860,000 for adjustments in the estimated inflation allowance through the construction period and an increase of $2,760,000 for post contract award and other estimating adjustments for the first beach nourishment.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final EIS was filed with CEQ on 10 September 1975. The provisions of Section 404 of the Clean Water Act were met by a Section 404(b)(1) Evaluation on 30 January 1984 and a Certification issued by the State of Florida on 30 October 1984. A Certification for the second sections will be obtained in the 2nd Quarter of Fiscal Year 1986.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in Fiscal Year 1973 and initial construction funds were appropriated in Fiscal Year 1976.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Jacksonville

Project: Duval County, Florida

Item	Estimates Presented to Congress ($1,000) Original Baseline	Cumulative Changes	Last	Incremental Change	Current
Federal Cost (Price Level)	10,700 (Jul 1974)		14,100 2/ (Oct 1984)		16,000 1/ 2/ (Oct 1985)
Reason for Change		(3,400) 2/		(1,900) 1/	
a. Price Escalation		5,224		-860	
b. Design Changes		2,043			
c. Additional Functions, Added Under General Authorization					
d. Authorized Modification					
e. Post-Contract Award and Other Estimating Adjustments		-3,867		2,760 3/	
f. Schedule Changes					
g. Sundry					
h. Real Estate					

NOTE: 1/ Includes a decrease of $860 for adjustments in the estimated inflation allowance through the construction period.
2/ Includes an allowance for estimated inflation through the construction period.
3/ Increase of $2,760 due to an increase of beach nourishment from 790,000 cubic yards to 1,088,000 for Part 1 - Reaches 2 & 3(Part) ($951) and an increase from 830,000 cubic yards to 1,080,000 cubic yards for Part 2 - Reach 3(Rem) and 4 ($1,809).

4 FEB 1986

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REPORTS CONTROL SYMBOL DAEN-CWBS-E

APPROPRIATION TITLE CONSTRUCTION GENERAL	CLASSIFICATION Beach Erosion Control Project

SUMMARY CONSTRUCTION PROGRAM (PB 1)

FISCAL YEARS 19 86 AND 19 87

LINE NO.	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Beach Replensihment	24,071,000	10,608,000	3,395,000	5,247,000	4,821,000
2	Engineering & Design	1,720,000	977,000	150,000	100,000	493,000
3	Supervision & Administration	1,609,000	640,000	150,000	132,000	687,000
4	Total Applied Cost (Fed & Non-Fed)	27,400,000	12,225,000	3,695,000	5,479,000	6,001,000
5	Undistributed Costs (None)					
6	Total Project Cost (Fed & Non-Fed)	27,400,000	12,225,000	3,695,000	5,479,000	6,001,000
7	Pending Adjustments (None)					
8	Total Cost (Fed & Non-Fed)	27,400,000	12,225,000	3,695,000	5,479,000	6,001,000
9	Undelivered Orders		(+)113,000	(-)113,000		
10	Total Obligations		12,338,000	3,582,000	5,479,000	6,001,000
11						
12	Federal Funds					
13	Total Applied Cost	16,000,000	7,161,000	2,158,000	3,200,000	3,481,000
14	Undistributed Cost (None)					
15	Total Project Cost	16,000,000	7,161,000	2,158,000	3,200,000	3,481,000
16	Pending Adjustments (None)					
17	Total Cost	16,000,000	7,161,000	2,158,000	3,200,000	3,481,000
18	Undelivered Orders		(+) 108,000	(-) 108,000		
19	Total Obligations		7,269,000	2,050,000	3,200,000	3,481,000
20						
21						
22	Non-Federal Funds					
23	Total Applied Cost	11,400,000	5,064,000	1,537,000	2,279,000	2,520,000
24	Undistributed Cost (None)					
25	Total Project Cost	11,400,000	5,064,000	1,537,000	2,279,000	2,520,000
26	Pending Adjustments (None)					
27	Total Cost	11,400,000	5,064,000	1,537,000	2,279,000	2,520,000
28	Undelivered Orders		(+) 5,000	(-) 5,000		
29	Total Obligations		5,069,000	1,532,000	2,279,000	2,520,000
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC	SOUTH ATLANTIC-GULF	DUVAL COUNTY, FLORIDA
	DISTRICT JACKSONVILLE	BASIN ST. JOHNS	

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

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REPORTS CONTROL SYMBOL

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Beach Erosion Control Project

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO.	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Method of Financing					
2						
3	Federal Funds					
4	Allocations	16,000,000	9,419,000	(-) 100,000 1/		
5	Unobligated Carryover from Prior Year			2,150,000		
6	Total Funds Available for Obligation			2,050,000		
7	Appropriation Required				3,200,000	3,481,000
8						
9	Non-Federal Funds					
10	Contributions	11,400,000	6,712,000			
11	Unobligated Carryover from Prior Year			1,643,000	111,000	
12	Total Funds Available for Obligation			1,643,000	2,279,000	
13	Contribution Required				2,168,000	2,520,000
14	Lands and Relocations	2,578,000	1,250,000	440,000	440,000	448,000
15	Total Non-Federal Costs	13,978,000	7,962,000	440,000	2,608,000	2,968,000
16						
17						
18						
19						
20						
21						
22						
23	1/ Reflects $200,000 reduction assigned as Savings & Slippage and					
24	transfer of $1,400,000 from the project.					
25						
26						
27						
28						
29						
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC	SOUTH ATLANTIC-GULF	DUVAL COUNTY, FLORIDA
	DISTRICT JACKSONVILLE	BASIN ST. JOHNS	

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Beach Erosion Control Project

PROJECT: Palm Beach County, Florida (Martin County Line to Lake Worth Inlet and South Lake Worth Inlet to Broward County Line) (Reimbursement)

LOCATION: Palm Beach County is located on the east coast of Florida about 300 miles south of Jacksonville and 70 miles north of Miami. Northerly reach of the project is separated from the southerly reach by Palm Beach Island. Project consists of about 12.2 miles of ocean coastline.

AUTHORIZATION: River & Harbor Act of 1962

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 6.1 to 1 at 3 1/4 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1975) was 1.16 to 1. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost (C of E)
Estimated Federal Cost		$ 10,900,000	
Estimated Non-Federal Cost		18,400,000	
Cash Contribution	$ 18,400,000		
Total Estimated Project Cost		$ 29,300,000	
Allocations to 30 September 1985		$ 4,221,000	
Conference Allowance for FY 1986		0	
Allocation for FY 1986		0	
Allocations to Date		4,221,000	39
Allocation Requested for FY 1987		1,700,000	54
Scheduled Balance to Complete After FY 1987		0	
Unscheduled Balance to Complete After FY 1987		4,979,000	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE 1/
Initial Fill:		
Delray Beach	100	Sep 1974
Boca Raton	0	Sep 1986
Remaining Initial Fill	0	Unscheduled
Beach Nourishment:		
Delray Beach		
4 year	100	Sep 1978
6 year	100	Sep 1984
Remaining Nourishment	0	Unscheduled
Sand-Transfer Plant	0	Unscheduled
Entire Project	13	Oct 1986

1/ Scheduled work only, remaining work is not scheduled pending determination of need.

Division: South Atlantic

District: Jacksonville

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Region: South Atlantic-Gulf
Palm Beach, County, Florida

PHYSICAL DATA

Beach Replenishment	
Initial Beach Fill	5,690,000 CY
Periodic Nourishment	309,000 CY annually
Sand-Transfer Plant	1

JUSTIFICATION: Much of the ocean shore of Palm Beach County is highly developed with residences, hotels, and condominiums. Shore erosion is causing the loss of valuable beaches and property and places seawalls and other protective structures under direct wave attack. Shorefront highways have been damaged, especially during adverse weather. Beaches in the project areas are visited annually by hundreds of thousands of local residents and tourists. It is essential to the economy of the general area that the beaches be improved and protected. The project, when completed, will greatly reduce damage to the beach and to shorefront roads, seawalls, and buildings, and provide additional recreational facilities for private and public use. The initial fill for the Delray segment of the authorized project has been completed. It has been highly successful in protecting development while providing a large recreational beach.

Breakdown of average annual benefits:

Item	Amount (1 Oct 85)
Beach erosion control	$ 2,384,000
Recreation	7,772,000
TOTAL	$ 10,156,000

FISCAL YEAR 1987: The requested amount will be applied as follows:

Reimbursement - Boca Raton Beach	$ 1,700,000
TOTAL	$ 1,700,000

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NON-FEDERAL COST: The estimated cost to the local sponsor for complying with the requirements of local cooperation for construction of the project is $18,400,000, including an adjustment in the estimated inflation allowance through the construction period. Local interests are required to provide a cash contribution: 50 percent of the cost of providing erosion control when the beach is publicly-owned or used, 30 percent for parks, and 100 percent of the cost of providing nourishment landward of the beach erosion control line. Non-Federal cost is broken down as follows:

Cash Contribution.....	$ 18,400,000
TOTAL	$ 18,400,000

STATUS OF LOCAL COOPERATION: An agreement required by Section 221 and incorporating the additional requirements of Public Law 91-646 was executed by local interests 23 January 1973 and approved by OCE 25 June 1973 for Delray.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $10,900,000 is an increase of $3,500,000 over the latest estimate ($7,400,000) submitted to Congress (FY 1985). This change includes an increase of $197,000 for adjustments in the estimated inflation allowance through the construction period; a decrease of $43,000 for design changes associated with the discontinuance of Federal participation for O&M Sand Transfer Plant and an increase of $3,346,000 for post-contract award and other estimating adjustments associated with a completed contract (-$3,000), and increasing the Federal share on Delray Beach to Boca Raton Inlet reach from 5.1 percent to 52 percent based on a change in land ownership ($3,349,000).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH THE CLEAN WATER ACT: A draft EIS was filed with EPA on May 24, 1985. The Final EIS will be filed with EPA in 3rd Quarter Fiscal Year 1986. The provisions of Section 404 of the Clean Water Act will be met by a Section 404(b)(1) Evaluation in 3rd Quarter Fiscal Year 1986.

OTHER INFORMATION: Initial reimbursement funds were appropriated in Fiscal Year 1975.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Jacksonville

Project: Palm Beach County, Florida

Item	Estimates Presented to Congress ($1,000) Original Baseline	Cumulative Changes	Last	Incremental Change	Current
Federal Cost (Price Level)	1,710 (Jul 1973)		7,400 2/ (Oct 1983)		10,900 1/2/ (Oct 1985)
Reason for Change		(5,690) 2/		(3,500) 1/	
a. Price Escalation		2,531		197	
b. Design Changes		1,412		-43 3/	
c. Additional Functions Added Under General Authority					
d. Authorized Modifications					
e. Post-Contract Award and Other Estimating Adjustments		-153		3,346 4/	
f. Schedule Changes		-			
g. Sundry		1,900			
h. Real Estate					

NOTE 1/ Includes an increase of $197 for adjustments in the estimated inflation allowance through the construction period.
2/ Includes an allowance for estimated inflation through the construction period.
3/ Decrease in design effort associated with discontinuance of Federal paritcipation for O&M Sand Transfer Plant.
4/ Includes an adjustment associated with a completed contract (+$3) and an increase in the Federal share on the Delray Beach to Boca Raton Inlet reach from 5.1 percent to 52 percent based on changed land ownership ($3,349).

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REPORTS CONTROL SYMBOL DAEN-CWB-E

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: BEACH Erosion Control Project

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Beach Replenishment	29,300,000	8,451,000	4,345,000	-	16,504,000
2						
3	Total Applied Cost (Fed & Non-Fed)	29,300,000	8,451,000	4,345,000	-	16,504,000
4	Undistributed Cost (None)					
5	Total Project Cost (Fed & Non-Fed)	29,300,000	8,451,000	4,345,000	-	16,504,000
6	Pending Adjustments (None)					
7	Total Cost (Fed & Non-Fed)	29,300,000	8,451,000	4,345,000	-	16,504,000
8	Undelivered Orders		(+) 7,000	(-) 7,000		
9	Total Obligations		8,458,000	4,338,000	-	16,504,000
10						
11	Federal Funds					
12	Total Applied Cost	10,900,000	3,804,000	2,167,000	-	4,929,000
13	Undistributed Cost (None)					
14	Total Project Cost	10,900,000	3,804,000	2,167,000	-	4,929,000
15	Pending Adjustment (None)					
16	Total Cost	10,900,000	3,804,000	2,167,000	-	4,929,000
17	Undelivered Orders		(+) 7,000	(-) 7,000		
18	Total Obligations		3,811,000	2,160,000	-	4,929,000
19						
20	Non-Federal Funds					
21	Total Applied Costs	18,400,000	4,647,000	2,228,000	-	11,525,000
22	Undistributed Cost (None)					
23	Total Project Cost	18,400,000	4,647,000	2,228,000	-	11,525,000
24	Pending Adjustments (None)					
25	Total Cost	18,400,000	4,647,000	2,228,000	-	11,525,000
26	Undelivered Orders (None)					
27	Total Obligations		4,647,000	2,228,000	-	11,525,000
28						
29						
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC	SOUTH ATLANTIC-GULF	PALM BEACH COUNTY, FLORIDA
	DISTRICT JACKSONVILLE	BASIN SOUTHERN FLORIDA	

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REPORTS CONTROL SYMBOL

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: Beach Erosion Control Project

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 19 86 AND 19 87

LINE NO.	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Method of Financing					
2						
3	Federal Funds					
4	Allocations	10,900,000	4,221,000			
5	Unobligated Carryover from Prior Year			410,000	410,000	
6	Total Funds Available for Obligation				2,010,000	
7	Appropriation Required				1,700,000	4,979,000
8						
9	Non-Federal Funds					
10	Contribution	18,400,000	4,647,000			
11	Unobligated Carryover from Prior Year					
12	Total Funds Available for Obligation					
13	Contribution Required			4,338,000	(-)2,110,000	11,525,000
14						
15						
16						
17						
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20						
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22						
23						
24						
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EFFECTIVE DATE	DIVISION / DISTRICT	REGION / BASIN	PROJECT
13 JAN 1986	SOUTH ATLANTIC / JACKSONVILLE	SOUTH ATLANTIC-GULF / SOUTH FLORIDA	PALM BEACH COUNTY, FLORIDA

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Beach Erosion Control Projects

PROJECT: Pinellas County, Florida (Continuing)

LOCATION: The project is located along the west-central coast of Florida covering about 25 miles of the island beaches in the Clearwater-St. Petersburg area of Pinellas County extending from Dunedin Pass to Pass-A-Grille Pass.

AUTHORIZATION: River and Harbor Act of 1966

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 6.6 to 1 at 3 1/8%. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1969) was 1.5 to 1. The benefit-to-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost (C of E)
Estimated Federal Cost		$19,100,000	
Estimated Non-Federal Cost		20,762,000	
Cash Contribution	$20,700,000		
Other	62,000		
Total Estimated Project Cost		$39,862,000	
Allocations to 30 September 1985		$ 3,110,000	
Conference Allowance for FY 1986		1,300,000	
Allocation for FY 1986		1,100,000 1/	
Allocations to Date		4,210,000	22
Allocation Requested for FY 1987		1,600,000	30
Scheduled Balance to Complete After FY 1987		10,700,000	
Unscheduled Balance to Complete After FY 1987		2,590,000	

STATUS (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE 2/
Groins:		
Treasure Island	100	Sep 1976
Treasure Island Groin No. 2 Extension	100	Jun 1983
Pass-A-Grille	100	Jun 1984
Redington Shores Breakwater	30	Mar 1986
Rehabilitation of N. Groin at Johns Pass	0	Sep 1986
Long Key Breakwater	0	Sep 1986
Initial Fill:		
Treasure Island	100	Jul 1969
Long Key	100	Apr 1980
Sand Key		
Redington Shores	100	Sep 1985
N. Redington Beach, and Redington Beach	0	Sep 1987
Remainder	0	Sep 1991
Clearwater	0	Sep 1991

1/ Reflects $200,000 reduction assigned as savings and slippage.
2/ Remaining work for periodic beach renourishment is not scheduled pending determination of need.

Division: South Atlantic

District: Jacksonville
4 FEB 1986

Region: South Atlantic-Gulf
Pinellas County, Florida

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STATUS (1 January 1985)(cont'd)	PERCENT COMPLETE	COMPLETION SCHEDULE 2/
Nourishment:		
Treasure Island (1st, 2d,3d,4th)	100	Nov 1971, Mar 1973, Sep 1976, Jun 1983
Long Key (Advance)	100	Apr 1980
Remaining	0	Sep 1986
Sand Key	0	Unscheduled 2/
Entire Project	24	Sep 1991

PHYSICAL DATA

Groins	1,850 tons of bedding stone and 3,400 tons of armor stone.
Revetment	2,700 tons of riprap and 1,600 tons of filter stone.
Placement of Initial Beach Fill	3,443,000 CY
Periodic Beach Nourishment	110,000 CY of material annually.

JUSTIFICATION: Erosion problems include the lowering of beach profiles, recession of the shorelines, and damage to upland properties. The shore is highly developed and used intensively year round. The project will provide needed restoration and stability of the beaches and protection for shore development. Beach ownership is predominantly private. Nourishment completed to date at Treasure Island and Long Key has been highly successful in retaining the material and providing protection to development while providing a large recreational beach. The Treasure Island segment provides restoration and protection along 2.4 miles of shore. The Long Key segment provides restoration and nourishment along 1.5 miles of shore. The beach restoration at Sand Key will prevent damages to development and provide a highly used recreational beach. Local interests are attempting to establish public beaches gulfward of private property over major parts of the project length.

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JUSTIFICATION (Cont'd):

Breakdown of average annual benefits:

Item	Amount (1 Oct 85)
Beach erosion control	$ 6,794,000
Recreation	8,893,000
TOTAL	$ 15,687,000

FISCAL YEAR 1987: The requested amount of $1,600,000 will be used to complete construction of North Redington Beach and Redington Beach on Sand Key and to initiate nourishment of the Remainder of Sand Key.

NON-FEDERAL COST: The estimated cost to the local sponsor, Pinellas County Board of County Commissioners, of complying with the requirements of local cooperation for construction of the project as set forth in the authorizing legislation is $20,762,000, including an adjustment in the estimated inflation allowance through the construction period. Local interests are required to provide lands, easements, right-of-way, and drainage improvements; cash contribution is 50 percent of the cost of construction, including Engineering and Design and Supervision and Administration, with the exception of the Clearwater Beach Island portion, which is 94.1 percent of the cost of construction, including Engineering and Design and Supervision and Administration. Non-Federal cost is as follows:

Item	Amount
Cash contribution	$ 20,700,000
Other costs (Lands, easements, rights-of-way, and drainage improvements)	62,000
TOTAL	$ 20,762,000

STATUS OF LOCAL COOPERATION: Assurances of local cooperation from the Pinellas County Board of Commissioners were accepted by the District Engineer on 22 March 1967. Additional assurances required by Public Law 91-646 were accepted in May 1971. The Pinellas County Board of County Commissioners have adopted resolutions agreeing to act as local sponsor for the Long Key, St. Petersburg Beach and Sand Key segments.

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Pinellas County, Florida

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COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $19,100,000 is a decrease of $300,000 over the latest estimate ($19,400,000) submitted to Congress (FY 1986). This change includes a decrease of $876,000 for adjustments in the estimated inflation allowance through the construction period; an increase of $576,000 for post-contract award adjustment of a completed contract for the groin at Long Key, Pass-A-Grille (+$18,000), an estimating adjustment after reevaluating mobilization and demobilization costs for Redington shores Breakwater (+$53,000), and a design change which added a new breakwater at Long Key (+$505,000).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

Long Key. The District Engineer signed an Environmental Assessment, with a negative declaration for the Long Key segment, on 20 Sep 1978. Provisions of Section 404 for Long Key were met on 20 September 1978. The public notice was issued 10 October 1978, a certification from the State of Florida was issued 28 Jun 1979, and the District Engineer signed the evaluation in July 1979.

Treasure Island Groin Extension and Beach Nourishment. An existing Environmental Assessment (1974) was updated 1 February 1982. The Water Quality Certification and Section 404(b)(1) Evaluation were completed 1 February 1982.

Pinellas Restudy-Sand Key. A Draft EIS was filed with EPA on 25 May 1984. The final EIS, including a Section 404(b), was filed with EPA on November 8, 1985. The project is exempt from State Water Quality Certification by Section 404(r) of the Clean Water Act.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in Fiscal Year 1968. Funds to initiate construction were appropriated in Fiscal Year 1969.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Jacksonville

Project: Pinellas County, Florida

Item	Estimates Presented to Congress ($1,000) Original Baseline	Cumulative Changes	Last	Increment Change	Current
Federal Cost (Price Level)	790 (Jul 1969)		19,400 2/ (Oct 1984)		19,100 1/2/ (Oct 1985)
Reason for Change					
a. Price Escalation		(18,610) 2/		(-300) 1/	
b. Design Changes		8,263		-876	
c. Additional Functions Added Under General Authority		5,527		505 3/	
d. Authorized Modifications					
e. Post-Contract Award and Other Estimating Adjustments		+4,030		71 4/	
f. Schedule Changes		3,600			
g. Sundry		5,250			
h. Real Estate					

NOTE: 1/ Includes a decrease of $876 for adjustments in the estimated inflation allowance through the construction period.
2/ Includes an allowance for estimated inflation allowance through the construction period.
3/ Increase of $505 for design change adding a new breakwater at Long Key.
4/ Increase of $71 for post-contract award adjustment of a completed contract for the groin at Long Key, Pass-A-Grille (+$18) and an estimating adjustment after reevaluating mobilization and demobilization costs for Redington Shores Breakwater (+$53).

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REPORTS CONTROL SYMBOL: DAEN-CWB-E

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: Beach Erosion Control Project

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Breakwaters & Seawalls	3,505,000	1,358,000	2,047,000	100,000	-
2	Beach Replenishment	32,425,000	2,244,000	693,000	2,749,000	26,739,000
3	Engineering & Design	2,066,000	1,023,000	125,000	176,000	743,000
4	Supervision & Administration	1,804,000	274,000	147,000	175,000	1,209,000
5	Total Applied Cost (Fed & Non-Fed)	39,800,000	4,897,000	3,012,000	3,200,000	28,691,000
6	Undistributed Costs (None)					
7	Total Project Cost (Fed & Non-Fed)	39,800,000	4,897,000	3,012,000	3,200,000	28,691,000
8	Pending Adjustments(None)					
9	Total Cost (Fed & Non-Fed)	39,800,000	4,897,000	3,012,000	3,200,000	28,691,000
10	Undelivered Orders		(+) 565,000	(-) 565,000		
11	Total Obligations		5,462,000	2,447,000	3,200,000	28,691,000
12						
13	Federal Funds					
14	Total Applied Cost	19,100,000	2,672,000	1,538,000	1,600,000	13,290,000
15	Undistributed Cost (None)					
16	Total Project Cost	19,100,000	2,672,000	1,538,000	1,600,000	13,290,000
17	Pending Adjustments (None)					
18	Total Cost	19,100,000	2,672,000	1,538,000	1,600,000	13,290,000
19	Undelivered Orders		(+) 309,000	(-) 309,000		
20	Total Obligations		2,981,000	1,229,000	1,600,000	13,290,000
21						
22	Non-Federal Funds					
23	Total Applied Cost	20,700,000	2,553,000	1,460,000	1,600,000	15,401,000
24	Undistributed Cost (None)					
25	Total Project Cost	20,700,000	2,553,000	1,460,000	1,600,000	15,401,000
26	Pending Adjustments (None)					
27	Total Cost	20,700,000	2,553,000	1,460,000	1,600,000	15,401,000
28	Undelivered Orders		(+) 256,000	(-) 256,000		
29	Total Obligations		2,481,000	1,218,000	1,600,000	15,401,000
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC	SOUTH ATLANTIC-GULF	PINELLAS COUNTY, FLORIDA
	DISTRICT JACKSONVILLE	BASIN SOUTHERN FLORIDA	

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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REPORTS CONTROL SYMBOL:

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Beach Erosion Control Project

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Method of Financing					
2						
3	Federal Funds					
4	Allocations	19,100,000	3,110,000	1,100,000 1/		
5	Unobligated Carryover from Prior Yr			129,000		
6	Total Funds Available for Obligation			1,229,000		
7	Appropriation Required				1,600,000	13,290,000
8						
9	Non-Federal Funds					
10	Contributions	20,700,000	2,553,000	1,146,000		
11	Unobligated Carryover from Prior Yr			72,000		
12	Total Funds Available for Obligation			1,218,000		
13	Contribution Required				1,600,000	15,401,000
14	Lands, Easements and Rights-of-Way	62,000	62,000			
15	Total Non-Federal Cost	20,762,000	2,615,000	1,146,000	1,600,000	15,401,000
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26	1/ Reflects $200,000 reduction assigned as Savings & Slippage					
27						
28						
29						
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC	SOUTH ATLANTIC-GULF	PINELLAS COUNTY, FLORIDA
	DISTRICT JACKSONVILLE	BASIN SOUTHERN FLORIDA	

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APPROPRIATION TITLE: Construction General - Beach Erosion Control Projects

PROJECT: Tybee Island, Georgia (Continuing)

LOCATION: Tybee Island is located in Chatham County, Georgia, directly south of the Savannah River entrance, and about 17 miles east of Savannah, Georgia.

AUTHORIZATION: Authorized in 1971 under Section 201 of the 1965 Flood Control Act.

BENEFIT TO COST RATIO: The remaining benefit-remaining cost ratio is 1.4 to 1 at 5 3/8 percent. The benefit to cost ratio for the Fiscal Year for which Congress appropriated initial construction funds (FY 1973) was 1.3 to 1. The benefit to cost is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost (C of E)
Estimated Federal Cost (Corps of Engineers)	$ 5,635,000	
Estimated Non-Federal Cost	5,865,000	
Cash Contributions ($5,865,000)		
Total Estimated Project Cost	$11,500,000	
Allocations to 30 September 1985	$ 2,530,000	
Conference Allowance for FY 1986	$ 1,100,000	
Allocation for FY 1986	$ 1,100,000	
Allocation to Date	$ 3,630,000	64
Allocation Requested for FY 1987	$ 2,005,000	36
Scheduled Balance to Complete after 30 September 1987	0	
Scheduled Balance to Complete after FY 1987	0	

STATUS:(1 Jan 1986)	PERCENT COMPLETE	COMP. SCHED.
Groin Construction (North End)	100	Apr 76
Groin Construction (South End)	0	Dec 86
Beach Fill and Advance Nourishment	100	Oct 75
Future Nourishment - 1st Increment	0	Mar 87
Entire Project	40	Mar 87

PHYSICAL DATA

Terminal Groin (North End)..... 1,025 LF
Terminal Groin (South End)..... 800 LF
Placement of Initial Beach Fill.....2,262,100 CY
Includes 3-year Advance Nourishment)
Periodic Nourishment.....1,272,000 CY

JUSTIFICATION: Tybee Island is subject to direct assault by hurricane winds, strong northeast winds and tidal surge. The island's seaward shore suffers from erosion, recession of the shoreline, and reduction of the beach

DIVISION: South Atlantic DISTRICT: Savannah REGION: South Atlantic - Gulf

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Tybee Island, Georgia

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JUSTIFICATION: (Continued)

profile. This condition makes the beach, seawalls, and other structures vulnerable to severe damage and reduces available recreation area. The project began in September 1974 with the construction of a terminal groin at the north end of the island, followed by beach nourishment which was completed in April 1976. Two areas are currently experiencing severe erosion. The erosion occurring on the south end of the island is in the area of highest recreational usage. This erosion was greatly increased by two recent major storm events; Hurricane Diana in September 1984 and a northeaster on Thanksgiving 1984. Both storms resulted in emergency requests under PL 84-99.

Engineering studies and comparative cost studies indicate that an additional groin, located on the south end, is the more suitable and economical method for maintaining beach stability, protecting property, and insuring maximum recreation benefits from use of the publicly owned shores.

Breakdown of Average Annual Benefits

Item	Amount (Oct 85)
Recreation	$ 1,722,600
Beach Erosion Control	216,900
Area Redevelopment	214,700
TOTAL	$ 2,154.200

FISCAL YEAR 1987: The requested amount of $2,005,000 will be applied as follows:

Complete Groin Construction	$ 112,000
Complete Beach Renourishment	$ 1,828,000
Supervision & Administration	$ 41,000
Engineering & Design	$ 24,000
TOTAL	$ 2,005,000

Tybee Island, Georgia

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NON-FEDERAL COSTS: The estimated cost to the local sponsor of complying with the requirements of local cooperation for construction of the project as set forth in the authorizing legislation is $5,865,000 including an adjustment in the inflation allowance through the construction period, and are as follows:

Groin Construction (North End)	$ 520,000
Groin Construction (South End)	622,800
Beach Fill and Advance Nourishment	1,527,000
Future Nourishment	2,742,300
Engineering & Design & Supervision & Administration	452,900
	$5,865,000

STATUS OF LOCAL COOPERATION: The City of Tybee Island and the State of Georgia are acting as the local sponsors. The requirements of local participation have been complied with, with the understanding that $294,400 is still owed on the non-Federal share of original project. The local sponsors furnished these funds as part of a $1,369,000 FY 86 contribution. The non-Federal money for FY 86 will cover their share of the groin construction and begin beach renourishment. The local sponsors have built a suitable parking area for the North End Beach. To date the local sponsors have provided cash contributions in the amount of $3,397,700.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $5,635,000 is the same as last presented to Congress.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Environmental Impact Statement was filed with CEQ on 2 November 1973. The Water Certification and Section 404 clearance originally obtained in 1981 are still valid according to State agency.

OTHER INFORMATION: Initial construction funds were appropriated in FY 1973. The $2,469,000 available in FY 1986 will allow a response to comments on GDM Supplement No. 3, completion of the PAC, update of the plans and specifications, completion of environmental assessment of borrow area and south end groin area, and award of the groin construction contract and start of renourishment. With requested FY 1987 funding, future renourishment will be completed.

Tybee Island, Georgia

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Savannah

Project: Tybee Island, Georgia
Estimates Presented to Congress ($1,000)

	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	$1,080 (Jul 71)		$5,635 1/ (Oct 84)		$5,635 1/ (Oct 85)
Reason for Change					
a. Price Escalation		$4,555			
b. Design Changes		2,362			
c. Additional Function Added Under General Authorization		1,273			
d. Authorized Modification					
e. Post-contract Award and Other Estimating Adjustments		60			
f. Schedule Changes		860			
g. Sundry					
h. Real Estate					

1/ Includes an allowance for estimated inflation through the construction period.

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Tybee Island, Georgia

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: BEACH EROSION CONTROL PROJECT

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 85 AND 19 86

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19
	(a)	(b)	(c)	(d)	(e)	(f)
1	BREAKWATERS AND SEAWALLS	2,271,000	1,021,000	1,000,000	250,000	
2	BEACH REPLENISHMENT	7,851,000	2,583,000	1,206,000	4,062,000	
3	ENGINEERING AND DESIGN	988,000	729,000	220,000	39,000	
4	SUPERVISION AND ADMINISTRATION	390,000	226,000	74,000	90,000	
5	TOTAL APPLIED COST (FED. FUNDS & NON-FED					
6	CONTRIBUTIONS)	11,500,000	4,559,000	2,500,000	4,441,000	
7	UNDISTRIBUTED COST - NONE					
8	TOTAL PROJECT COST (FED FUNDS & NON-FED					
9	CONTRIBUTIONS)	11,500,000	4,559,000	2,500,000	4,441,000	
10	PENDING ADJUSTMENTS - NONE					
11	TOTAL COST (FED FUNDS & NON-FED					
12	CONTRIBUTIONS)	11,500,000	4,559,000	2,500,000	4,441,000	
13						
14	FEDERAL FUNDS	5,635,000	2,530,300	1,100,000	2,004,700	
15	Undelivered Orders		0	0	0	
16	Total Obligations		2,530,300	1,100,000	2,004,700	
17						
18	NON-FEDERAL CONTRIBUTIONS	5,865,000	2,028,700	1,400,000	2,436,300	
19	Undelivered Orders		0	0	0	
20	Total Obligations		2,028,700	1,400,000	2,436,300	
21						
22	METHOD OF FINANCING (FED FUNDS ONLY)					
23	Allocations		2,530,300	1,100,000		
24	Unobligated Carryover from prior year			0		
25	Total funds available for obligation			1,100,000		
26	Appropriations required				2,004,700	
27						
28	METHOD OF FINANCING (NON-FED CONTRIBU-					
29	TIONS)					
30	Contributions		2,028,700	1,400,000		
31	Unobligated carryover from prior year			0		
32	Total funds available for obligation			1,400,000		
33	Contributions required				2,436,300	

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 Jan 86	SOUTH ATLANTIC	SOUTH ATLANTIC - GULF	Tybee Island, Georgia
	DISTRICT SAVANNAH	BASIN COASTAL AREAS ABOVE FL	

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APPROPRIATION TITLE: Construction, General - Local Protection Project (Flood Control)

PROJECT: Central and Southern Florida, FL (Continuing)

LOCATION: The project is located in the southeasterly 18 counties of the State of Florida. Principal areas are Upper St. Johns River Basin, Kissimmee River Basin, Lake Okeechobee-Everglades Area, and East Coast-Everglades Area.

AUTHORIZATION: 1948, 1954, 1960, 1962, 1965, 1968 Flood Control Acts, and Authorization in 1970 under Section 201 of the 1965 Flood Control Act.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 4.5 to 1 at 2 1/2%. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1950) was 2.1 to 1. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Federal Cost (Corps of Engineers)		$ 767,000,000	
Estimated Federal Cost (U. S. Coast Guard)		2,360,000	
Estimated Non-Federal Cost		431,465,000 1/	
Cash Contribution	$206,000,000		
Other	225,465,000		
Total Estimated Project Cost		$1,200,825,000	
Allocations to 30 September 1985		$ 286,056,000	
Conference Allowance for FY 1986		13,000,000	
Allocation for FY 1986		10,700,000 2/	
Allocations to Date		296,756,000	39
Allocation Requested for FY 1987		15,000,000	41
Scheduled Balance to Complete After FY 1987		139,044,000	
Unscheduled Balance to Complete After FY 1987		316,200,000	

STATUS (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE 3/
Relocations-Highways (Bridges)	0	Unscheduled 3/
Relocations-Railroads (Bridges)	91	Oct 1993
Locks	12	Unscheduled 3/
Channels and Canals	76	Sep 1994
Breakwaters and Seawalls	0	Unscheduled 3/
Levees and Floodwalls	68	Sep 1996
Pumping Plants	62	Sep 1993
Recreation Facilities	0	Sep 1986
Floodway Control and Diversion Structures	86	Sep 1993
Buildings, Grounds & Utilities	100	May 1982
Entire Project	78	Sep 1996

1/ Local interests have also expended over $1,000,000 on emergency construction and are progressively providing necessary secondary work.
2/ Reflects $2,300,000 reduction assigned as savings and slippage.
3/ For scheduled work only, remaining work is not scheduled pending determination of need.

Division: South Atlantic District: Jacksonville Region: South Atlantic-Gulf

4 FEB 1986

Central and Southern Florida,FL

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PHYSICAL DATA

Lands and Damages		Relocations-Railroads (Bridges)	56
The 1968 authorization included lands for recreational areas.		Locks (Number)	25
Pumping Plants (Number)	30	Length	60' to 400'
Capacity (Gallons per Minute)	20,623,000	Width	20' to 56'
Floodway Control & Diversion Structures (No.)	212	Canals (Miles)	978
Relocations-Highways (Bridges)	2	Levees (Miles)	990
		Minimum to Maximum Height	2' to 28'

JUSTIFICATION:

a. Flood Control - The Central and Southern Florida project is primarily a flood control project requested after the maximum flood of record in 1947. Existing damages, without the project, were $59,693,000 ($343,718,000 at 1 October 1985 price levels). The 1947 flood frequency averages 1 in 25 years over the project area, with an average duration of 70 days. Minor floods occur almost yearly in the project area and major floods occur frequently. This situation is aggravated by wet antecedent conditions followed by heavy seasonal rainfall.

The average degree of protection provided by the completed project will be a 1-in-10 year flood frequency protection. Upon completion, 2,853,700 acres will be protected. This encompasses 2,765,100 agricultural acres and 88,600 urban acres. Present value of property subject to flood damages is about $11.5 billion. Property types include residential, commercial, industrial, public, and agricultural. Average annual damages without the project would be $98,414,000 and $22,634,000 with the project. Damages attributable to urban property are 16.7 percent and 83.3 percent to rural property. The proportion of average annual damages prevented attributable to existing development is 36.8 percent and 63.2 percent to future development.

b. Water Supply - Under Public Law 90-483, an additional purpose, water supply, was added to the Central and Southern Florida project. The storage capacity of the entire project is 2,953,000 average annual acre-feet divided into approximately 1,600,000 acre-feet for urban use by 2020 and 740,000 acre-feet for agricultural use by 2020. The Everglades National Park is assured of 315,000 acre-feet per year and an additional 298,000 acre-feet in dry years. Benefits for water supply are $21,969,000 for agricultural and $17,893,000 for urban. The project has been extended into Martin County to provide agricultural water supply resulting in benefits of $9,234,400. The pumping rate for irrigation of 590 square miles would yield approximately 917,850 acre-feet per year for agricultural use. Recurrent drought conditions with resultant low flows require supplemental irrigation to insure adequate crop yields.

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JUSTIFICATION (Cont'd): Flood damages incurred since project authorization total $304,890,000; damages prevented by project works in place at time of flood total $472,155,000; damages with no project works would have totaled $778,573,000.

Breakdown of average annual benefits:

Item	Amount (1 Oct 1985)
Flood control	$249,082,000
Water supply	17,892,000
Irrigation	21,969,000
Recreation	11,017,000
Fish and wildlife	266,000
Area redevelopment	2,025,000
TOTAL	$302,251,000

FISCAL YEAR 1987: The requested amount will be applied as follows:

Continue & complete construction of remaining canals; continue installation of pumping structure; and initiate construction of flood control structures on West Palm Beach Canal	$ 4,270,000
Initiate construction of flood control structure in in Upper St. Johns River	400,000
Continue construction of Herbert Hoover Dike Levee & Revetment	7,070,000
Engineering and Design	2,465,000
Supervision and Administration	795,000
TOTAL	$ 15,000,000

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NON-FEDERAL COST: The estimated cost to the local sponsors, the South Florida and St. Johns Water Management Districts, of complying with the requirements of local cooperation as set forth in the authorizing legislation for construction of the total project is $431,465,000, including an adjustment in the estimated inflation allowance through the construction period. Local interests are required to provide lands, easements, and rights-of-way, and a cash contribution requirement that includes:

Year of Authorization	Feature	Non-Federal Percent 1/
1948	Comprehensive Plan	15.0%
1948	North New River & Miami Canal Hump Removal	20.0%
1954	Comprehensive Plan - Modified	20.0%
1960	Nicodemus Slough	31.5%
1962	Cutler Drain Area	0.0%
1962	South Dade County	19.2%
1962	Boggy Creek Basin	29.7%
1962	Shingle Creek Basin	25.9%
1962	Reedy Creek Swamp (Including E&D)	50.0%
1962	West Palm Beach Canal	12.8%
1965	Hendry County	19.5%
1965	Southwest Dade County	46.0%
1968	Martin County (Flood Control)	34.0%
1968	Martin County (Irrigation)	49.0%
1968	Martin County (Backflow)	20.0%
1968	Water Resources (St. Lucie)	20.0%
1968	Water Resources (Buttonwood Culvert) (N.P.S.)	0.0%
1968	Martin County (Recreation) (PL 89-72) (Including E&D)	50.0%
1968	Water Resources (Recreation) (PL 89-72) (Including E&D)	50.0%
1968	Lands and Damages (Recreation) (PL 89-72) (Including E&D)	50.0%
1970	Navigation (PL 89-298) (Including E&D)	50.0%

1/ Construction cost including Supervision and Administration.

All separable elements initiated in the future will be formulated consistent with the cost-sharing and financing concepts agreed to by the Administration and Senate Majority Leadership.

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NON-FEDERAL COST (Cont'd):

A breakdown of the non-Federal cost is as follows (1 Oct 1985):

Lands and damages	$ 158,900,000
Relocations	65,800,000
Contributions (Cash)	206,000,000
Review of plans and specifications	765,000
TOTAL	$ 431,465,000

Local interests are required to operate and maintain all project works upon completion except main control structures of Water Conservation Areas 1, 2, and 3, and features directly controlling and/or protecting Lake Okeechobee. Annual cost to local interests for operation and maintenance of the total project is estimated at $13,464,000. Estimate of annual maintenance of secondary works provided by local interests is $3,253,000.

STATUS OF LOCAL COOPERATION: Assurances of local cooperation have been accepted from the local sponsor, South Florida Water Management District, for all works authorized under the Central and Southern Florida Flood Control project except for Small Boat Navigation features added in 1970 under Section 201 of the 1965 Flood Control Act and the Upper St. Johns River portion of the project. Local interests voluntarily executed a supplemental assurances contract which was approved by the District Engineer on 1 July 1972 for all modifications to the project except the features added in 1970. There is limited local interest in the Small Boat Navigation (1970 Auth) feature at this time. On-going studies in Kissimmee and St. Johns Rivers Basins are expected to produce a recommendation concerning the future status of the Small Boat Navigation feature. Assurances of local cooperation have been accepted from the St. Johns River Water Management District for the Upper St. Johns River portion.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $767,000,000 is a decrease of $62,000,000 from the latest estimate ($829,000,000) submitted to Congress (FY 1986). This change includes an increase of $6,874,000 for adjustments in the estimated inflation allowance through the construction period; a decrease of $68,874,000 due to design changes resulting in a new plan for levees, structures, and canals (-$79,423,000) and the addition of recreation facilities (+$2,466,000) to Upper St. Johns River; additional dewatering requirements for installation of baffle blocks at five structures, (+$577,000); addition of a new section, (+$4,945,000) and using gabions in lieu of riprap in a contract of the Herbert Hoover Dike Levee and Revetment (-$1,774,000); addition of two hurricane gate replacement structures (+$4,979,000) and deletion of two hurricane gate modify contracts (-$467,000); and post-contract award adjustment on a completed contract (+$23,000).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: Environmental impact statements have been submitted to CEQ or will be prepared and submitted to EPA and the provisions of Section 404 of the Clean Water Act have been or will be met for segmented portions of the project as follows:

Project Segment	Section 404 Evaluation	Water Quality Certification	EIS Draft/Final	Findings of No Significant Impact
Martin County-St. Lucie Co. Water Supply	2nd Qtr FY 86	2nd Qtr FY 86	Not required	2nd Qtr FY 86
Upper St. Johns	2nd Qtr FY 86	3rd Qtr FY 86	2nd Qtr FY 86/3rd Qtr FY 86	
West Palm Beach Canal 1/	5 Feb 81	23 Mar 82	Not required	Feb 81
Herbert Hoover Dikes	Not required	Not required	Not required	Apr 81
Port Mayaca Recreation	Not required	Not required	Not required	Dec 74
Shingle Creek	2nd Qtr FY 86	4th Qtr FY 86	2nd Qtr FY 86/3rd Qtr FY 86	
S-351	Not required	Not required	12 Jun 84	
S-352	Not required	3rd Qtr FY 86	12 Jun 84	

1/ Includes all features under the West Palm Beach Canal segment.

OTHER INFORMATION: Funds to initiate preconstruction planning and construction were appropriated in Fiscal Year 1950. The House Appropriations Committee, in its report (H.R. No. 93-327) on the 1974 Public Works Appropriations Bill, directed the Corps of Engineers to prepare a report updating the economics and long-range costs for the project. As a result of the report, about $50 million of authorized project facilities were deleted or reclassified to the "inactive" status, as reflected in the FY 1985 Budget data submitted to Congress. In December 1983, about $47 million of authorized features were placed in the inactive category. In October 1984, an additional $2 million of authorized features were placed in the inactive category. This is a result of the continuous studies being conducted to identify features of this project that will qualify for reclassification.

Long-term studies are being conducted to determine a means of providing water supply deliveries to Everglades National Park (ENP) in conjunction with satisfying the future water supply demands of the remainder of the Central and Southern Florida Project. Additionally, in response to ENP's request for immediate action, studies are being conducted and some construction is underway to provide interim relief pending completion of long-term studies.

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OTHER INFORMATION (Cont'd): The Supplemental Appropriations Act of 1984, Section 1302, authorized a 2-year field test of a new water delivery schedule to Everglades National Park. The Act also authorizes acquisition of agricultural lands which would be adversely impacted and construction of flood protection measures for homes in the area affected by the field test. The Continuing Resolution Authority for FY 1986 (HJ Res 465) extended the test period to January 1, 1989. A GDM has been initiated to provide the design of required structural and operational modifications to the CSF project works; address the best method of mitigation impacts on adjacent developed areas; and access potential benefits to Everglades ecosystems. The GDM is scheduled for completion in early 1987.

Engineering and design for the Hendry County element is completed, the Shingle Creek element is scheduled to be completed in 1990 and the Martin Co - Irrigation (St Lucie Co Water Supply) element is scheduled to be completed in 1991, after which they will be considered for construction under the cost-sharing and financing policy in effect at the time.

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4 FEB 1986 1336 Central and Southern Florida, FL

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Jacksonville

Project: Central and Southern Florida

Item	Estimates Presented to Congress ($1,000) Original Baseline	Cumulative Changes	Last	Incremental Change	Current
Federal Cost (Price Level)	237,500 (Jul 1958)		829,000 2/ (Oct 1984)		767,000 1/2/ (Oct 1985)
Reason for Change		(591,500) 2/		(-62,000) 1/	
a. Price Escalation		436,348		6,874	
b. Design Changes		-28,700		-68,897 3/	
c. Additional Functions Added Under General Authority		142,013		-	
d. Authorized Modifications		6,413		-	
e. Post-Contract Award and Other Estimating Adjustments		42,311		23 4/	
f. Schedule Changes		-		-	
g. Sundry		-7,541		-	
h. Real Estate		656		-	

NOTES: 1/ Includes an increase of $6,874 for the adjustments in the estimated inflation allowance through the construction period.

2/ Includes an allowance for estimated inflation through the construction period.

3/ Decrease of $68,897 due to design changes resulting in a new plan for levees, structures, and canals (-$79,423) and the addition of recreation facilities (+$2,466) to Upper St. Johns River; additional dewatering requirements for installation of baffle blocks at S-65, A, B, C, and D (+$577); addition of a new section, Contract 7, (+$4,945) and using gabions in lieu of riprap in Contract 3 of Herbert Hoover Dike Levee and Revetment (-$1,774); addition of HGS-3 (S-354) and HGS-5 (S-352) replacement structures (+$4,979) and deletion of HGS-3 and HGS-4 Modify contracts (-$467).

4/ Increase of $23 for post-contract award adjustments on completed contract on S-331.

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REPORTS CONTROL SYMBOL DAEN-CWB-E

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Local Protection Projects (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Relocations	16,212,200	5,633,300	605,000	-	9,973,900
2	Locks	37,132,000	11,512,700	-	-	25,619,300
3	Channels and Canals	228,161,300	76,782,800	905,600	2,100,000	148,372,900
4	Breakwaters and Seawalls	3,396,000	-	-	-	3,396,000
5	Levees and Floodwalls	238,643,000	82,512,500	6,296,300	5,620,000	144,214,200
6	Pumping Plants	145,166,000	32,099,800	300,000	2,700,000	110,066,200
7	Recreation Facilities	27,508,000	-	640,000	-	26,868,000
8	Floodway Control & Diversion Structures	147,504,500	59,772,600	2,661,700	3,300,000	81,770,200
9	Building Grounds and Utilities	328,000	328,000	-	-	-
10	Engineering & Design	66,136,000	42,185,300	3,128,300	2,465,000	18,357,400
11	Supervision & Administration	62,813,000	24,337,400	1,286,200	917,000	36,272,400
12						
13	Total Applied Cost (Fed & Non-Fed)	973,000,000	335,164,400	15,823,100	17,102,000	604,910,500
14	Undistributed Cost (None)					
15	Total Project Cost (Fed & Non-Fed)	973,000,000	335,164,400	15,823,100	17,102,000	604,910,500
16	Pending Adjustments (None)					
17	Total Cost (Fed & Non-Fed)	973,000,000	335,164,400	15,823,100	17,102,000	604,910,500
18	Undelivered Orders		(+)3,157,400	(-)3,157,400		
19	Total Obligations		338,321,800	12,665,700	17,102,000	604,910,500
20						
21	Federal Funds					
22	Total Applied Cost	767,000,000	283,415,700	13,440,700	15,000,000	455,143,600
23	Undistributed Cost (None)					
24	Total Project Cost	767,000,000	283,415,700	13,440,700	15,000,000	455,143,600
25	Pending Adjustments (None)					
26	Total Cost	767,000,000	283,415,700	13,440,700	15,000,000	455,143,600
27	Undelivered Orders		(+) 2,684,900	(-) 2,684,900		
28	Total Obligations		286,100,600	10,755,800	15,000,000	455,143,600
29						
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC	SOUTH ATLANTIC-GULF	CENTRAL & SOUTHERN FLORIDA
	DISTRICT JACKSONVILLE	BASIN SOUTHERN FLORIDA	

ENG FORM 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986 1338

REPORTS CONTROL SYMBOL: DAEN-CWB-E

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Local Protection Project (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Non-Federal Funds					
2	Total Applied Cost	206,000,000	51,748,700	2,382,400	2,102,000	149,766,900
3	Undistributed Cost (None)					
4	Total Project Cost	206,000,000	51,748,700	2,382,400	2,102,000	149,766,900
5	Pending Adjustments (None)					
6	Total Cost	206,000,000	51,748,700	2,382,400	2,102,000	149,766,900
7	Undelivered Orders		(+) 472,500	(-) 472,500		
8	Total Obligations		52,221,200	1,909,900	2,102,000	149,766,900
9						
10						
11	Method of Financing					
12	Federal Funds	(767,000,000)				
13	Allocations		286,056,400	10,700,000 2/		
14	Advanced by Local Interests 1/		100,000			(-)100,000
15	Unobligated Carryover from Prior Yr			55,800		
16	Total Funds Available for Obligation			10,755,800		
17	Appropriation Required				15,000,000	455,243,600
18						
19	Non-Feceral Funds	(206,000,000)				
20	Contributions		54,051,400	1,328,700		
21						
22	Unobligated Carryover from Prior Yr			1,830,200	1,249,000	
23	Total Funds Available for Obligation			3,158,900	2,102,000	
24	Contribution Required				853,000	149,766,900
25						
26						
27						
28	1/: $100,000 advanced by local interests toward Federal construction costs as a part of the					
29	required cash contribution. When repaid, these funds will be credited toward meeting					
30	the cash contribution requirement.					
31						
32	2/ Reflects $2,300,000 reduction assigned as Savings and Slippage.					
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC	SOUTH ATLANTIC-GULF	CENTRAL & SOUTHERN FLORIDA
	DISTRICT: JACKSONVILLE	BASIN: SOUTHERN FLORIDA	

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Local Protection Projects (Flood Control)

PROJECT: Dade County, Florida (Continuing)

LOCATION: Dade County is on the southeast coast of Florida. The project area consists of that part of the Atlantic shoreline of the county from Government Cut north to Bakers Haulover Inlet and at Haulover Beach Park.

AUTHORIZATION: Flood Control Act of 1968 and Water Resources Development Act of 1974.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because the initial construction and initial beach nourishment have been completed. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1977) was 5.1 to 1. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost (C of E)
Estimated Federal Cost		$48,600,000	
Estimated Non-Federal Cost		41,050,000	
Cash Contribution	$39,000,000		
Other	2,050,000		
Total Estimated Project Cost		$ 89,650,000	
Allocations to 30 September 1985		$32,344,000	
Conference Allowance for FY 1986		2,300,000	
Allocation for FY 1986		1,400,000 1/	
Allocations to Date		33,744,000	69
Allocation Requested for FY 1987		2,000,000	74
Scheduled Balance to Complete After FY 1987		12,856,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Breakwaters & Seawalls		
Jetty Extension	100	Aug 1976
Upgrading N. Jetty at Government Cut	100	Nov 1983
Jetty Rehabilitation at Haulover Inlet	10	Nov 1986
Beach Replenishment		
Initial Fill	100	Jan 1982
Renourishment (North Portion)	0	Aug 1987
Renourishment		
63d St to 37th St	0	Jun 1988
37th St to Lincoln Rd	0	Jan 1989
Lincoln Rd to Government Cut	0	Jun 1990
Remaining Nourishment		Sep 1993
Entire Project	85	Sep 1993

1/ Reflects $900,000 reduction assigned as savings and slippage.

Division: South Atlantic

District: Jacksonville

4 FEB 1986

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Region: South Atlantic-Gulf
Dade County, Florida

PHYSICAL DATA

Jetty Extension	1
Initial Beach Fill	14,027,000 cy
Advance Nourishment	450,000 cy
Periodic Nourishment	1,752,000 cy

JUSTIFICATION: The Dade County shore, occupied by Miami Beach and a number of smaller communities, is highly developed and probably represents the most densely concentrated resort area in the world. The area is heavily visited by tourists throughout the year. The estimated current attendance for the project shore exceeds 15 million annually.

Prior to the initial beach fill, recession of the shore caused loss of valuable beaches and property and placed seawalls and other structures under direct wave attack. At a number of locations erosion undermined or threatened to undermine shorefront structures. Dade County lies in a zone of relatively high hurricane frequency, many of the most intense hurricanes of record having passed over or near the area. Hurricane tides and waves generated in the ocean and in Biscayne Bay by past hurricanes have caused major tidal flooding in the project area. A severe hurricane crossing the area on a critical path could cause a major flood disaster. The September 1926 hurricane devastated Miami and took 100 lives.

The beaches of Dade County are of prime importance as tourist attractions. It is essential to the economy of the area that the beaches be maintained and preserved. The project is not located in a redevelopment area. Average annual benefits are as follows:

Item	Amount (1 Oct 85)
Beach erosion control	$ 2,684,000
Recreation	16,349,000
Flood control (Hurricane protection)	1,176,000
TOTAL	$20,209,000

FISCAL YEAR 1987: The requested amount will be applied as follows:

Complete Jetty Rehabilitation at Haulover Inlet	$ 197,000
Complete Renourishment (Haulover Beach Park & Vicinity of 67th)	1,147,000
Initiate renourishment (63rd St to 37th St)	355,000
Engineering and Design	138,000
Supervision and Administration	163,000
TOTAL	$ 2,000,000

4 FEB 1986

Dade County, Florida

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NON-FEDERAL COST: The estimated cost to the local sponsor, Board of County Commissioners, Dade County, of complying with the requirements of local cooperation for construction of the project, as set forth in the authorizing legislation is $41,050,000, including an adjustment in the estimated inflation allowance through the construction period. Local interests are required to provide lands, easements, and rights-of-way; a cash contribution, 50 percent of the cost of providing erosion control when the beach is publicly owned or used, and 30 percent for parks; 100 percent of the cost of providing nourishment landward of the beach erosion control line; and 30 percent of the cost for providing hurricane protection along the project coastal area. A breakdown of the estimated Non-Federal cost is as follows:

Cash contribution	$39,000,000
Lands, easements, and rights-of-way.....	2,050,000
TOTAL	$41,050,000

STATUS OF LOCAL COOPERATION: The Dade County Board of County Commissioners, Miami, Florida, is the local sponsor. A Local Assurances Agreement pursuant to Section 221 of the River and Harbor and Flood Control Act of 1970 (PL 91-611) was accepted by the Secretary of the Army on 16 January 1973. A supplemental agreement for reimbursement to the local sponsor for the Bal Harbour portion was approved on 30 June 1976.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $48,600,000 is a decrease of $1,800,000 over the latest estimate ($50,400,000) submitted to Congress (FY 1986). This change includes a decrease of $299,000 for adjustments in the estimated inflation allowance through the construction period; a decrease of $1,501,000 for post-contract award adjustments on completed contracts for upgrading the North Jetty at Government Cut (+$5,000) and nourishment from Lincoln Road to Government Cut (+$1,534,000); and an estimating adjustment in the Federal share (+$28,000).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final EIS was filed with CEQ on 27 August 1976. The provisions of Section 404 of the Clean Water Act were met by a Section 404(b)(1) Evaluation in June 1984.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in Fiscal Year 1973 and initial construction funds were appropriated in Fiscal Year 1977. A supplement to the EIS was filed with EPA on March 18, 1983. Section 69 of the Water Resources Development Act of 1974 authorized initial construction by non-Federal interests of the 0.85-mile segment immediately south of Bakers Haulover Inlet (Bal Harbour). Local interests have accomplished the work and reimbursement was provided by funds included in the 1976 Appropriations Act (P.L. 94-180). The Supplemental Appropriations Act of 1985 extended Federal participation from 10 years to the life of the project.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Jacksonville

Project: Dade County, Florida

Item	Estimates Presented to Congress ($1,000) Original Baseline	Cumulative Changes	Last	Incremental Change	Current
Federal Cost (Price Level)	35,000 (Jul 1974)		50,400 2/ (Oct 1984)		48,600 1/2/ (Oct 1985)
Reason for Change		(15,400) 2/		(+1,800) 1/	
a. Price Escalation		24,233		+299	
b. Design Change		1,259			
c. Additional Functions Added Under General Authority					
d. Authorized Modifications		1,106			
e. Post-Contract Award and Other Estimating Adjustments		-11,198		-1,501 3/	
f. Schedule Changes					
g. Sundry					
h. Real Estate					

NOTE: 1/ Includes a decrease of $299 for adjustments in the inflation allowance through the construction period.
2/ Includes an allowance for estimated inflation through the construction period.
3/ Decrease of $1,501 for post-contract award adjustments on completed contracts for upgrading North Jetty at Government Cut (+$5), nourishment from Lincoln Road to Government Cut (+$1,534) and an estimating adjustment in the Federal share (+$28).

4 FEB 1986

Dade County, Florida

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REPORTS CONTROL SYMBOL DAEN-CWB-E

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Local Protection Project(Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO.	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Breakwaters & Seawalls	4,864,000	2,182,600	1,600,000	282,000	800,000
2	Beach Replenishment	74,168,000	50,928,000	2,000,000	2,748,000	18,492,000
3	Engineering & Design	4,104,000	1,960,000	200,000	250,000	1,694,000
4	Supervision & Administration	4,464,000	887,000	200,000	300,000	3,077,000
5	Total Applied Cost (Fed & Non-Fed)	87,600,000	55,957,000	4,000,000	3,580,000	24,063,000
6	Undistributed Cost (None)					
7	Total Project Cost (Fed & Non-Fed)	87,600,000	55,967,000	4,000,000	3,580,000	24,063,000
8	Pending Adjustments (None)					
9	Total Cost (Fed & Non-Fed)	87,600,000	55,957,000	4,000,000	3,580,000	24,063,000
10	Undelivered Orders		(+) 1,118,000	(-)1,118,000		
11	Total Obligations		57,075,000	2,882,000	3,580,000	24,063,000
12						
13	Fegeral Funds					
14	Total Applied Cost	48,600,000	31,424,000	2,320,000	2,000,000	12,856,000
15	Undistributed Cost (None)					
16	Total Project Cost	48,600,000	31,424,000	2,320,000	2,000,000	12,856,000
17	Pending Adjustments (None)					
18	Total Cost	48,600,000	31,424,000	2,320,000	2,000,000	12,856,000
19	Undelivered Orders		(+) 788,000	(-) 788,000		
20	Total Obligations		32,212,000	1,532,000	2,000,000	12,856,000
21						
22	Non-Federal Funds					
23	Total Applied Cost	39,000,000	24,533,000	1,680,000	1,580,000	11,207,000
24	Undistributed Cost (None)					
25	Total Project Cost	39,000,000	24,533,000	1,680,000	1,580,000	11,207,000
26	Pending Adjustment (None)					
27	Total Cost	39,000,000	24,533,000	1,680,000	1,580,000	11,207,000
28	Undelivered Orders		(+) 330,000	(-) 330,000		
29	Total Obligations		24,863,000	1,350,000	1,580,000	11,207,000
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC	SOUTH ATLANTIC-GULF	DADE COUNTY, FLORIDA
	DISTRICT JACKSONVILLE	BASIN SOUTHERN FLORIDA	

ENG FORM 6 SEP 76 2200 (IR 1-2-2401) EDITION OF 1 NOV 74 IS OBSOLETE.

4 FEB 1986 1341

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REPORTS CONTROL SYMBOL

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: Local Protection Project (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

No.	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 1986	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Method of Financing					
2						
3	Federal Funds					
4	Allocations	48,600,000	32,344,000	1,400,000 1/		
5	Unobligated Carryover from Prior Year			132,000		
6	Total Funds Available for Obligation			1,532,000		
7	Appropriation Required				2,000,000	12,856,000
8						
9	Non-Federal Funds					
10	Contributions	39,000,000	24,864,000	1,349,000		
11	Unobligated Carryover from Prior Year			1,000		
12	Total Funds Available for Obligation			1,350,000		
13	Contribution Required				1,580,000	11,207,000
14	Lands, Easements and Rights-of-Way	2,050,000	1,425,000	75,000	75,000	475,000
15	Total Non-Federal Cost	41,050,000	26,289,000	1,424,000	1,655,000	11,682,000
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23	1/ Reflects $900,000 reduction assigned as Savings & Slippage					
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EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC DISTRICT JACKSUNVILLE	SOUTH ATLANTIC-GULF BASIN SOUTHERN FLORIDA	DADE COUNTY, FLORIDA

ENG FORM 2280 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Local Protection Projects (Flood Control)

PROJECT: Dade County, North of Haulover Beach Park, Florida (Continuing)

LOCATION: Dade County is on the southeast coast of Florida. The project area consists of that part of the Atlantic shoreline extending 2.5 miles north of Haulover Beach Park.

AUTHORIZATION: The Supplemental Appropriations Act of 1985.

BENEFIT-COST-RATIO: The remaining benefit-remaining cost ratio is 2.7 to 1 at 8 1/8 percent. The benefit cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 2.7 to 1. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost (C of E)
Estimated Federal Cost		$13,000,000	
Estimated Non-Federal Cost		12,100,000	
Cash Contribution	$ 12,000,000		
Other	100,000		
Total Estimated Project Cost		$25,100,000	
Allocations to 30 September 1985		15,000	
Conference Allowance for FY 1986		0	
Potential Allocation for FY 1986		785,000	
Potential Allocation Through FY 1986		800,000	6
Allocation Requested for FY 1987		6,000,000	52
Scheduled Balance to Complete After FY 1987		1,300,000	
Unscheduled Balance to Complete After FY 1987		4,900,000 1/	

STATUS (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE 1/
Beach Replenishment		
Initial Fill -		
Sunny Isles	0	Mar 1988
Periodic Nourishment	0	Unscheduled 1/
Entire Project	0	Mar 1988

1/ Remaining work for periodic beach nourishment is not scheduled pending determination of need.

Division: South Atlantic

District: Jacksonville
4 FEB 1986

Region: South Atlantic-Gulf
Dade County, North of Haulover
Beach Park, Florida

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PHYSICAL DATA

Length of Initial Fill	13,000 feet
Initial Beach Fill	1,496,000 cy
Periodic Nourishment	715,000 cy

JUSTIFICATION: The Dade County shore is highly developed and probably represents the most densely concentrated resort area in the world. The area is heavily visited by tourists throughout the year and this project will provide a daily beach capacity of 25,300 visitors.

The recession of the shore has caused the loss of valuable beaches and property and placed seawalls and other structures under direct wave attack. Erosion has or threatens to undermine shorefront structures at several locations. The entire county lies in a zone of relatively high hurricane frequency with many of the most intense storms of record having passed over or near the area.

Breakdown of average annual benefits:

Item	Amount (1 Oct 85)
Storm Damage Prevention	$ 703,000
Recreation	5,452,000
TOTAL	$ 6,155,000

FISCAL YEAR 1987: The requested amount will be applied as follows:

Continue Nourishment of Sunny Isles	$ 5,673,000
Engineering and Design	106,000
Supervision and Administration	221,000
TOTAL	$ 6,000,000

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NON-FEDERAL COST: Consistant with the cost-sharing and financing concepts agreed to by the administration and the Senate Majority Leadership local interests will be required to provide lands, easements, and rights-of-way presently estimated at $100,000; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $11,075,000; and pay 35 percent of the cost allocated to storm damage prevention, presently estimated at $925,000. Local interests have also agreed to make all required payments and voluntary contributions concurrently with project construction. A breakdown of the estimated Non-Federal cost is as follows:

Cash contribution	$ 12,000,000
Lands, easements, and rights-of-way	100,000
TOTAL	$ 12,100,000

STATUS OF LOCAL COOPERATION: The Dade County Board of County Commissioners is the local sponsor. A Local Assurances Agreement pursuant to Section 221 of the River and Harbor and Flood Control Act of 1970 (PL 91-611) will be completed prior to June 30, 1986.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $13,000,000 is an increase of $6,100,000 over the latest estimate ($6,900,000) submitted to Congress (FY 1985). This change includes an increase of $1,274,000 for adjustments in the estimated inflation allowance through the construction period; an increase of $1,707,000 for design changes involving rock removal and handling; an increase of $1,125,000 based on adjustments between Federal and Non-Federal cost estimates consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership; and an increase of $1,994,000 for estimating adjustments reflecting larger quantities and recent bid experience.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: An EIS for the Dade County Project was filed with CEQ on August 20, 1976. A Supplement to the EIS was filed with EPA March 10, 1983. The provisions of Section 404 of the Clean Water Act will be met with the issuance of a Water Quality Certification from the State of Florida in the 3rd Quarter of FY 1986.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in Fiscal Year 1978 and construction funds were appropriated in Fiscal Year 1985. The authorized plan also extends Federal participation in the nourishment of the original portion of the Dade County project from 10 years to the life of the project.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Jacksonville

Project: Dade County, North of Haulover Beach Park, Florida

Item	Estimates Presented to Congress ($1,000) Original Baseline	Cumulative Changes	Last	Incremental Change	Current
Federal Cost (Price Level)	6,900 1/ (Oct 83)		6,900 (Oct 83)		13,000 1/ (Oct 85)
Reason for Change		(0)		(6,100) 1/	
a. Price Escalation		0		1,274	
b. Design Changes		0		1,707 2/	
c. Additional Functions Added Under General Authority		0		0	
d. Authorized Modifications		0		0	
e. Post-Contract Award and Other Estimating Adjustments		0		1,994 3/	
f. Schedule Changes		0		0	
g. Sundry		0		1,125 4/	
h. Real Estate		0		0	

NOTE: 1/ Includes $400 allowance for estimated inflation from 1 October 1985 through the construction period.
2/ Increase of $1,707 due to addition of rock handling and removal.
3/ Increase of $1,994 reflecting larger sand quantities and recent bid experience.
4/ Increase of $1,125 for adjustments of Federal and Non-Federal responsibilities.

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REPORTS CONTROL SYMBOL: DAEN-CWB-E

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Local Protection Project (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Beach Replenishment	21,843,000	-	1,000,000	10,700,000	10,143,000
2	Engineering & Design	1,701,000	-	400,000	200,000	1,101,000
3	Supervision & Administration	1,456,000	-	100,000	416,000	940,000
4	Total Applied Cost (Fed & Non-Fed)	25,000,000	-	1,500,000	11,316,000	12,184,000
5	Undistributed Cost (None)					
6	Total Project Cost (Fed & Non-Fed)	25,000,000	-	1,500,000	11,316,000	12,184,000
7	Pending Adjustments (None)					
8	Total Cost (Fed & Non-Fed)	25,000,000	-	1,500,000	11,316,000	12,184,000
9	Undelivered Orders					
10	Total Obligations		-	1,500,000	11,316,000	12,184,000
11						
12	Federal Funds					
13	Total Applied Cost	13,000,000	-	800,000	6,000,000	6,200,000
14	Undistributed Cost (None)					
15	Total Project Cost	13,000,000	-	800,000	6,000,000	6,200,000
16	Pending Adjustments (None)					
17	Total Cost	13,000,000	-	800,000	6,000,000	6,200,000
18	Undelivered Orders					
19	Total Obligations		-	800,000	6,000,000	6,200,000
20						
21	Non-Federal Funds					
22	Total Applied Cost	12,000,000	-	700,000	5,316,000	5,984,000
23	Undistributed Cost (None)					
24	Total Project Cost	12,000,000	-	700,000	5,316,000	5,984,000
25	Pending Adjustment (None)					
26	Total Cost	12,000,000	-	700,000	5,316,000	5,984,000
27	Undelivered Orders					
28	Total Obligations		-	700,000	5,316,000	5,984,000
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EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC DISTRICT JACKSONVILLE	SOUTH ATLANTIC-GULF BASIN SOUTHERN FLORIDA	DADE COUNTY, NORTH OF HAULOVER BEACH PARK, FLORIDA

ENG FORM 1 SEP 74 2260 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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REPORTS CONTROL SYMBOL

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: Local Protection Project (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO.	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Method of Financing					
2						
3	Federal Funds					
4	Allocations	13,000,000	-	800,000		
5	Unobligated Carryover from Prior Year					
6	Total Funds Available for Obligation			800,000		
7	Appropriation Required				6,000,000	6,200,000
8						
9	Non-Federal Funds					
10	Contributions	12,000,000	-	700,000		
11	Unobligated Carryover from Prior Year					
12	Total Funds Available for Obligation			700,000		
13	Contribution Required				5,316,000	5,984,000
14	Relocations	100,000		50,000	50,000	
15	Total Non-Federal Costs	12,100,000	-	750,000	5,366,000	5,984,000
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EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC	SOUTH ATLANTIC-GULF	DADE COUNTY, NORTH OF HAULOVER BEACH PARK, FLORIDA
	DISTRICT JACKSONVILLE	BASIN SOUTHERN FLORIDA	

ENG FORM 6 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Local Protection Project (Flood Control)

PROJECT: Four River Basins, Florida (Continuing)

LOCATION: The project area covers about 6,000 square miles within 15 counties in central and southwest peninsular Florida. The area is bounded on the north by the alinement of the Cross-Florida Barge Canal; on the east by the St. Johns River, Kissimmee River, and Fisheating Creek Basins; on the south by the Caloosahatchee River Basin; and on the west by the Gulf of Mexico, Myakka and Alafia River Basins, and other minor Gulf coastal basins. The project includes all or part of four main stream basins, the Hillsborough, Oklawaha, Withlacoochee, and Peace Rivers, and all of three smaller coastal basins north of Tampa, Florida, drained by the Pithlachascotee and Anclote Rivers, and Lake Tarpon.

AUTHORIZATION: Flood Control Act of 1962

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 2.2 to 1 at 3 1/8%. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1966) was 1.6 to 1. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost (C of E)
Estimated Federal Cost		$187,000,000	
Estimated Non-Federal Cost		131,820,000	
Cash Contributions	$38,700,000		
Other	93,120,000		
Total Estimated Project Cost		$318,820,000	
Allocations to 30 September 1985		$ 68,521,000	
Conference Allowance for FY 1986		2,500,000	
Allocation for FY 1986		1,100,000 1/	
Allocations to Date		69,621,000	37
Allocation Requested for FY 1987		1,200,000	38
Scheduled Balance to Complete After FY 1987		1,300,000	
Unscheduled Balance to Complete After FY 1987		114,879,000	

STATUS (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE 2/
Relocations-Railroads (Bridges)	100	Sep 1978
Channels and Canals	99	Apr 1986
Levees and Floodwalls	100	Mar 1981
Recreation	25	Mar 1989
Floodway Control & Diversion Structure	100	Mar 1983
Buildings, Grounds and Utilities	100	Aug 1978
Entire Project	97	Mar 1989

1/ Reflects $1,400,000 reduction assigned as savings and slippage.
2/ For scheduled work only, remaining work is not scheduled pending determination of need.

Division: South Atlantic District: Jacksonville Region: South Atlantic-Gulf
Four River Basins, Florida

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PHYSICAL DATA

Relocations	
Railroads (Bridges)	11
Levees	
Total Length (Miles)	81
Minimum to Maximum Height	10' to 17'
Canals	
Miles	113
Floodway Control & Diversion Structures	
(Number)	39

JUSTIFICATION: The Four River Basins project maximum flood of record occurred in March 1960. Damages, without the project, were $13,441,000 ($47,810,000 at 1985 price levels). The 1960 flood frequency averaged 1 in 25 years over the project area, with an average duration of 28 days and a range from 7 days in the Gulf Coastal area to 60 days in the Oklawaha River Basin. Damaging floods occur almost yearly. In June 1974, a heavy rainfall, following wet conditions, resulted in substantial flood damages of $5,862,000 (1974 price levels). Existing project works prevented an estimated $7,572,000 (1974 price levels) in flood damages. The completed project would have prevented all flood damages. In May 1979, heavy rainfall resulted in flood damages of $18,364,300 (1979 price levels). Existing project works prevented an estimated $22,882,000 (1979 price levels). The completed project would have prevented $29,886,000 (1979 price levels). Flat terrain and inadequate natural drainage cause long-term retention of heavy rainfalls and result in frequent flooding throughout the project area.

The average degree of protection provided by the completed project will be a 1 in 10 year flood frequency and 1 in 200+ for Tampa. Upon completion, 490,820 acres will be protected. This encompasses 489,180 agricultural acres and 1,640 urban acres. Present value of property subject to flood damages is about $296,233,000 (1985 price levels). Property types include residential, commercial, industrial, mining and agricultural. Average annual flood damages without the project would be $12,371,600 (1985 price levels) and $1,963,100 (1985 price levels) with the project. Damages attributable to urban property without the project are 44.6 percent and 55.4 percent to rural property. The proportion of average annual damages prevented attributable to existing development is 62.1 percent and 37.9 percent to future development.

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JUSTIFICATION (Cont'd):
Polk County is a redevelopment area in the Four River Basins project area under Public Law Section 401(a)(1).

Breakdown of average annual benefits:

Item	Amount (1 Oct 1985)
Flood Control	$22,169,000
Fish and Wildlife	498,000
Recreation	9,607,000
Area Redevelopment	562,000
TOTAL	$32,836,000

FISCAL YEAR 1987: The requested amount will be applied as follows:

Continue construction of recreation facilities at Tis-A-Wee and Trout Creek Sites.	$ 1,050,000
Engineering & Design	80,000
Supervision and Administration	70,000
TOTAL	$ 1,200,000

NON-FEDERAL COST: The estimated cost to the local sponsor, the Southwest Florida Water Management District, to comply with the requirements of local cooperation for construction of the project as set forth in the authorizing legislation is $131,820,000, including an adjustment in the estimated inflation allowance through the construction period. Non-Federal cost is as follows (1 Oct 85):

Lands and damages (includes recreation)	$55,270,000
Relocations (highways, bridges, etc., except railroad bridges and approaches)	37,850,000

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NON-FEDERAL COST (Cont'd)

Required contributed funds (17% of the sum of contract price of construction, including railroad relocations, and Supervision and Administration; and 50% of the sum of contract price of recreation and Engineering & Design and Supervision & Administration)	38,700,000
TOTAL	$131,820,000

All separable elements initiated in the future will be formulated consistent with the cost-sharing and financing concepts agreed to by the Administration and Senate Majority Leadership. Local interests are required to operate and maintain the project upon completion. The estimated annual cost of operation and maintenance is $1,263,000.

STATUS OF LOCAL COOPERATION: Assurances of local cooperation from Southwest Florida Water Management District were accepted by the Federal Government on 12 November 1963. Supplemental assurances were accepted on 14 January 1972 in compliance with Public Law 91-646. Construction of this project was underway as of 1 January 1972; therefore, a Local Assurances Agreement required by Section 221 of the River and Harbor and Flood Control Act of 1970 (PL 91-611) was not necessary, but local interests voluntarily executed a supplemental assurances contract which was accepted by the District Engineer on 14 January 1972.

The Southwest Florida Water Management District has furnished a resolution declaring its intention to participate in the development of recreational facilities for the entire Four River Basins project, pursuant to the Federal Water Project Act of 1965, including entering into specific agreements for recreational purposes. Final agreement was executed 20 April 1982.

A portion of the Four River Basins project known as Oklawaha River Basin is under the jurisdiction of the St. Johns River Water Management District. A Section 221 contract for local cooperation with the District was signed by the Secretary of the Army on 9 December 1976 and became effective on 31 December 1976.

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COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $187,000,000 is a decrease of $10,000,000 from the latest estimate ($197,000,000) presented to Congress (FY 1986). This change includes an increase of $3,488,000 for adjustments in the estimated inflation allowance through the construction period; a decrease of $13,488,000 for post-contract award adjustments for a reduction of excavation quantity on the Shoal Removal and Cleanup (C-135) Part (-$1,920,000) and Phase II, Dead River Recreation contract (+$57,000); other estimating adjustments due to reclassification to inactive L-111 (-$8,388,000) and S-151 (-$3,237,000); and design changes for reduced scope of the Phase III, Flatwoods Site 1 Recreation contract (-$193,000) and additional costs for rearrangement of construction features at Phase IV, Flatwoods Site 2 recreation contract (+$193,000).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: Environmental impact statements have been submitted to CEQ or will be prepared and submitted to EPA for segmented portions of the project as follows:

Segment of Project	Submittal Date	
	Draft	Final
C-135 and Lower Hillsboro Basin	25 May 73 (Actual)	8 Nov 74 (Actual)
C-132, S-153, and S-154 1/	EA Completed	3 February 1981

1/ For C-132, S-153, and S-154, an environmental assessment was completed 3 February 1981, but the plan is subject to change. A Section 404 evaluation is not required as no dredged or fill material will be placed in the waters of the United States.

The provisions of Section 404 of the Clean Water Act for S-159 have been met by a Section 404(b)(1) Evaluation signed by the District Engineer on 29 March 1979, Public Notice issued 26 September 1978, and a Certification from the State of Florida was issued 16 March 1979. The provisions of Section 404 of the Clean Water Act for the remainder of the project will be met with the submission of an EIS, including a Section 404(b)(1) Evaluation, or by obtaining State Water Quality Certification.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in Fiscal Year 1965. Funds to initiate construction were appropriated in Fiscal Year 1966.

A Florida law changed the boundary of the Southwest Florida Water Management District, effective on 1 January 1977, and assigned that portion of the Four River Basins project comprising the Oklawaha River Basin to the jurisdiction of the newly established St. Johns River Water Management District.

Studies indicated the need for additional recreation facilities, particularly for the Lower Hillsborough portion of the project. A postauthorization change report for Lower Hillsborough Flood Detention Area and related areas, to cover substantial increases in recreational benefits and cost, was approved on 12 May 1978.

Regular ongoing studies are being conducted to identify features of the project that qualify for reclassification.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Jacksonville

Project: Four River Basins, Florida

Item	Estimates Presented to Congress ($1,000) Original Baseline	Cumulative Changes	Last	Incremental Change	Current
Federal Cost (Price Level)	$ 56,300 (Jul 1964)		$197,000 2/ (Oct 1984)		$187,000 1/2/ (Oct 1985)
Reason for Change		(140,700) 2/		(-10,000) 1/	
a. Price Escalation		113,861		3,488	
b. Design Changes		15,405		-	
c. Additional Functions Added Under General Authority		5,543		-	
d. Authorized Modifications		-		-	
e. Post-Contract Award and Other Estimating Adjustments		6,332		-13,488 3/	
f. Schedule Changes		-		-	
g. Sundry		-441		-	
h. Real Estate		-		-	

NOTE: 1/ Includes an increase of $3,488 for adjustments in the estimated inflation allowance through the construction period.
2/ Includes an allowance for estimated inflation through the construction period.
3/ Decrease of $13,488 for post-contract award adjustments for reduction of excavation quantity on the Shoal Removal and Cleanup (C-135) Part contract (-$1,920) and Phase II Dead River Site Recreation contract (+$57); other estimating adjustments due to the reclassification to inactive of L-111 (-$8,388) and S-151 (-$3,237).

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APPROPRIATION TITLE: CONSTRUCTION GENERAL

REPORTS CONTROL SYMBOL: DAEN-CWB-E

CLASSIFICATION: Local Protection Project (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 88 AND 19 87

LINE NO.	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Relocations	8,830,000	3,922,000	-	-	4,908,000
2	Channels	57,722,000	28,388,000	1,453,000	-	27,881,000
3	Levees & Floodwalls	72,194,000	5,087,000	-	-	67,107,000
4	Recreation Facilities	7,409,000	1,515,000	717,000	2,757,000	2,420,000
5	Floodway Control Structures	54,516,000	24,121,000	-	-	30,395,000
6	Buildings, Grounds & Utilities	69,000	69,000	-	-	-
7	Engineering & Design	12,990,000	10,936,000	125,000	183,000	1,746,000
8	Supervision & Administration	11,970,000	5,508,000	135,000	162,000	6,165,000
9	Total Applied Cost (Fed & Non-Fed)	225,700,000	79,546,000	2,430,000	3,102,000	140,622,000
10	Undistributed Cost (None)					
11	Total Project Cost (Fed & Non-Fed)	225,700,000	79,546,000	2,430,000	3,102,000	140,622,000
12	Pending Adjustments (None)					
13	Total Cost (Fed & Non-Fed)	225,700,000	79,546,000	2,430,000	3,102,000	140,622,000
14	Undelivered Orders		(+)871,000	(-)871,000		
15	Total Obligations		80,411,000	1,559,000	3,102,000	140,622,000
16						
17	Federal Funds					
18	Total Applied Cost					
19	Undistributed Cost (None)	187,000,000	67,575,000	1,695,000	1,551,000	116,179,000
20	Total Project Cost					
21	Pending Adjustments (None)	187,000,000	67,575,000	1,695,000	1,551,000	116,179,000
22	Total Cost					
23	Undelivered Orders		(+) 618,000	(-) 618,000		
24	Total Obligations		68,193,000	1,077,000	1,551,000	116,179,000
25						
26	Non-Federal Funds					
27	Total Applied Cost					
28	Undistributed Cost (None)	38,700,000	11,971,000	735,000	1,551,000	24,443,000
29	Total Project Cost					
30	Pending Adjustments (None)	38,700,000	11,971,000	735,000	1,551,000	24,443,000
31	Total Cost					
32	Undelivered Order		(+)253,000	(-)253,000		
33	Total Obligations		12,224,000	482,000	1,551,000	24,443,000

EFFECTIVE DATE: 13 JAN 1986

DIVISION: SOUTH ATLANTIC

DISTRICT: JACKSONVILLE

REGION: SOUTH ATLANTIC-GULF

BASIN: SOUTHERN FLORIDA

PROJECT: FOUR RIVER BASINS, FLORIDA

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 1 FEB 1986

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REPORTS CONTROL SYMBOL

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: Local Protection Project (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO.	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
(a)		(b)	(c)	(d)	(e)	(f)
1	Method of Financing					
2	Federal Funds					
3	Allocations	187,000,000	65,521,000	1,100,000 1/		
4	Unobligated Carryover from Prior Yr			328,000	351,000	
5	Total Funds Available for Obligation			1,428,000	1,551,000	
6	Appropriation Required				1,200,000	116,179,000
7						
8	Non-Federal Funds					
9	Contribution	38,700,000	12,330,000	376,000		
10	Unobligated Carryover from Prior Yr			106,000		
11	Total Funds Available for Obligation			482,000		
12	Contribution Required				1,551,000	24,443,000
13	Lands and Damages	55,270,000	19,100,000			36,170,000
14	Relocations	37,850,000	13,000,000			24,850,000
15	Total Non-Federal Costs	131,820,000	44,430,000	376,000	1,551,000	85,463,000
16						
17						
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28	1/ Reflects $1,400,000 assigned as Savings & Slippage					
29						
30						
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EFFECTIVE DATE	DIVISION	REGION	PROJECT
13 JAN 1986	SOUTH ATLANTIC	SOUTH ATLANTIC-GULF	FOUR RIVER BASINS, FLORIDA
	DISTRICT JACKSONVILLE	BASIN SOUTHERN FLORIDA	

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Tombigbee River and Tributaries, Mississippi and Alabama (Channel Improvement) (Continuing)

LOCATION: On tributaries of the Tombigbee River in northwest Alabama and northeast Mississippi.

AUTHORIZATION: Flood Control Act of 1958 and Supplemental Appropriations and Recision Act of 1980.

BENEFIT-TO-COST RATIO: The remaining benefit-remaining cost ratio is 1.04 to 1 at 3 percent, excluding the work on Twenty Mile Creek from mile 11.7 to 22.0 for which monetary benefits have not been quantified. The benefit-to-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1965) was 1.7 to 1. The benefit-to-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

			ACCUM. PCT. OF ESTMTD. COST
Estimated Federal Cost		$50,000,000	
Estimated Non-Federal Cost		2,446,900	
Cash Contributions	$ 91,900		
Other Costs	2,355,000		
Total Estimated Project Cost		$52,446,900	
Allocations to 30 September 1985		16,309,000	
Conference Allowance for FY 1986		3,300,000	
Allocation FY 1986		2,400,000[1]/	
Allocations to Date		18,709,000	39
Allocation Requested for FY 1987		4,900,000	48
Schedule Balance to Complete after FY 1987		6,262,000	
Unscheduled Balance to Complete after FY 1987		20,129,000	

1/ Reflects $900,000 reduction assigned as savings and slippage.

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Big Browns Creek	100	16 Nov 1965
Donivan Creek	100	18 Apr 1966
Twenty Mile Creek		
Mouth to Mi. 11.7	100	1 Aug 1967
Mi. 11.7 - 22.0	28	Sep 1989
Mantachie Creek	100	2 Nov 1967
James Creek	100	3 Feb 1969
Stanefer Creek	100	10 Feb 1969
Transition Sections - Donivan & Twenty Mile Creeks	100	27 Mar 1971
Luxapalila Creek	21	Unscheduled1/
Lower 2.1 Miles	(100)	(Nov 1973)
Remainder	(0)	(Unscheduled)1/
West Fork	0	Unscheduled
Entire Project	54	Sep 1989

1/ Remaining work is not scheduled pending determination of need.

Division: South Atlantic District: Mobile Region: South Atlantic - Gulf

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PHYSICAL DATA

Channels: Improve 69.2 miles along 8 tributary streams of the Tombigbee River by means of erosion protection, clearing and snagging, channel enlargement, new channels, and cut-offs. Work has been completed on 40.8 miles of channel. Remaining work is along Luxapalila Creek (17.1 miles), Twenty Mile Creek (10.3 miles), and West Fork (1.0 mile).

JUSTIFICATION: Luxapalila Creek is located in northeast Mississippi and northwest Alabama. It rises in southern Marion County near Winfield, Alabama and flows in a southwesterly direction for 75 miles through Fayette and Lamar Counties, Alabama and Lowndes County, Mississippi to join the Tombigbee River through the left bank at river mile 362.35. Floods occur along Luxapalila Creek with fairly frequent regularity. Damages along Luxapalila Creek are from urban flooding in Columbus, Mississippi and from rural flooding of agricultural and forested lands upstream of Columbus. Damages in Columbus are to residential structures, heavy industry, a major shopping center, and extensive strip type commercial development. The principal agricultural crops subject to flood damage are cotton and soybeans. The maximum flood of record on Luxapalila Creek occurred in April 1979 and caused about $555,000 in damages in the Columbus area.

Studies on West Fork are currently unscheduled. Because of local support, this segment of the flood control project is retained in the active status and evaluations will begin when Luxapalila Creek studies near completion.

Bank stabilization works are underway along Twenty Mile Creek (mile 11.7 to 22.0) to control serious erosion problems.

Counties within a reasonable commuting distance of the project which have been designated as redevelopment areas under Section 401(a) of P.L. 89-136 are as follows:

Title IV:
Sub-Section 1: Franklin County, AL; Tishomingo County, MS; and Hardin County, TN.
Sub-Section 2: Bibb, Choctaw, Fayette, Marengo, Marion, Perry, Pickens and Winston Counties, AL; Alcorn, Benton, Calhoun, Chickasaw, Choctaw, Itawamba, Montgomery, Neshoba, Newton, Oktibbeha, Pontotoc, Prentiss, Tippah, Union, Webster, Winston, and Yalobusha Counties, MS; and McNairy County, TN.
Sub-Section 2 and 7: Hale and Sumter Counties, AL.
Sub-Section 3: Choctaw Indian Reservation, MS.
Sub-Section 7: Lauderdale County, MS.
Sub-Section 8: Lamar, Lauderdale and Walker Counties, AL; Attala County, MS.

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BREAKDOWN OF AVERAGE ANNUAL BENEFITS

ITEM	AMOUNT (1 Oct 85)
Flood Control	$ 2,067,000
Area Redevelopment	290,000
Total	$ 2,357,000

FISCAL YEAR 1987: The requested amount will be applied as follows:

Lands (Acquisition for Twenty Mile Creek, mile 11.7 - 22.0)	$ 186,000
Continue Twenty Mile Creek Channel Stabilization Work	4,264,000
Engineering and Design	200,000
Supervision and Administration	250,000
Total	$4,900,000

NON-FEDERAL COST: The estimated cost to the local sponsors, Tombigbee River Valley Water Management District, in Mississippi and Tombigbee Valley Development Authority in Alabama, of complying with the requirements of local cooperation for construction of the improvement as set forth in the authorizing legislation, is estimated at $2,446,900. Local interests are required to provide lands, easements, and rights-of-way and a fixed cash contribution amount per stream as set forth in the 1958 Flood Control Act. They are also required to make at their expense, all roads, highway bridges, and utility changes, alterations, additions, and relocations necessary for the project. Twenty Mile Creek (mile 11.7 to 22.0) is a Federal responsibility as set forth in the Supplemental Appropriations and Recissions Act of 1980 (P.L. 96-304). A breakdown of the estimated non-Federal cost is as follows:

Cash contributions	$ 91,900
Lands, relocations and alterations	2,355,000
	$2,446,900

All separable elements initiated in the future will be formulated consistent with the cost-sharing and financial concepts agreed to by the Administration and the Senate Majority Leadership.

Local interests are required to operate and maintain the project upon completion with the exception of Twenty Mile Creek from mile 11.7 to 22.0. The estimated non-Federal annual cost of operation and maintenance is $120,000 and the Federal cost of operation and maintenance for Twenty Mile Creek is $4,000.

STATUS OF LOCAL COOPERATION: House Bill 179 was enacted into law during the 1962 regular session of the Mississippi Legislature. This law authorized creation of the Tombigbee River Valley Water Management District (TRVWMD) through which all the affected counties in Mississippi may participate in the project as a unit to assume the role of local sponsor.

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STATUS OF LOCAL COOPERATION: (Cont'd)
The TRVWMD has been set up in accordance with provisions of the enabling legislation and has furnished satisfactory resolution covering the portion of the project in Mississippi. By resolution adopted in April 1973, TRVWMD gave assurances of its compliance with requirements of Public Law 91-646 (Uniform Relocations Assistance and Real Property Acquistion Policies Act of 1970). Lands and cash contributions have been furnished as required. The Alabama Legislature, in its 1967 session, authorized formation of a public corporation to be named Tombigbee Valley Development Authority (TVDA) for the purpose of further development of the Tombigbee River and Tributary streams. The organization has been formed and in a referendum held 5 December 1967, the voters of Alabama authorized a bond issue not to exceed $10,000,000 to finance local interests' participation in this project and the Tennessee-Tombigbee Waterway project. Satisfactory resolution has been furnished. In February 1974, TVDA adopted a resolution pledging its compliance with provisions of Public Law 91-646.

The TVDA has issued and sold $8,000,000 in bonds to finance relocations affected by the Tennessee-Tombigbee Waterway project. Revenue from the bonds also defrayed TVDA costs acquiring easements for Luxapalila Creek. TVDA furnished its cash contribution for Luxapalila Creek construction. Three of the four existing highway bridges required relocation or modification by local interests prior to initiation of channel improvement on the remainder of Luxapalila Creek. Two of these bridges are owned by Lowndes County, one by the city of Columbus and one by the State of Mississippi. The city of Columbus and TRVWMD each defrayed 50% of the cost. Lowndes County and TRVWMD have completed alterations to the Water Works bridge and reconstruction of the Pickensville bridge under the same funding formula. The State of Mississippi, acting in concert with TRVWMD, has replaced the existing two-lane U. S. Highway 82 bridge with a four-lane facility.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $50,000,000 is the same as the latest estimate ($50,000,000) submitted to Congress (FY 1986). Internal changes include a decrease of $567,000 for adjustments in the estimated inflation allowance through the construction period; an increase of $87,000 for post contract award and other estimating adjustments, and an increase of $480,000 for acquisition of real estate for Twenty Mile Creek.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement (FEIS) on Luxapalila Creek was filed with the Council on Environmental Quality (CEQ) on 21 May 1975 A Final Supplemental EIS covering the alternatives and selected plan for the Luxapalila Creek is scheduled for filing with EPA in August 1986. If the selected plan is substantially different from the previously authorized project an authorization and appropriation action will be required by the Congress.

A Section 404(b) Evaluation will be prepared on the Luxapalila Creek for the selected plan if that plan would involve the discharge of dredged or fill material into waters of the United States. This evaluation will be incorporated into the FSEIS and submitted to Congress prior to authorization. Thus, the project would be

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STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: (Cont'd)
exempted from the requirement for State Water Quality Certification as provided for in Section 404(r) of the Clean Water Act. If the selected plan is one that could be performed within existing project authorities, Water Quality Certification would be obtained from the States of Alabama and Mississippi prior to undertaking work.

The required environmental compliance actions including State Water Quality Certification and environmental assessments were completed on 2 October 1982 for Twenty Mile Creek pilot grade control structures, and 18 July 1983 for the Phase II work involving construction of grade control structures at Okeelala, Town, and Robinson Creeks; and protection of Mississippi Highway 362 bridge, US Highway 45 bridge and County Road bridges at mile 13.0 and 19.0; 3 May 1985 for the Phase III erosion control measures; and 24 October 1985 for the Phase III bioengineering measures.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in Fiscal Year 1962 and for construction in Fiscal Year 1965.

The State of Alabama filed a complaint in 1975 alleging noncompliance with NEPA and attacking the economics of the Luxapalila Creek project, and requested that construction be enjoined. A temporary injunction was granted on 14 April 1976. Public meetings were held in June 1980 for input of information and data by the citizens on Luxapalila Creek. It is necessary that any proposals for actions on Luxapalila Creek be first presented to the Court. On 2 July 1981, the Plaintiff, State of Alabama, the Defendant, Corps of Engineers, and the Intervening Defendant, local Mississippi sponsor, filed a joint Motion for Dissolution of the Preliminary Injunction and Dismissal, based on the facts that (1) new regulations and procedures must now be implemented prior to any construction, (2) new studies must be undertaken, and (3) a new EIS will be prepared. The Court subsequently denied the motion, allowing two conservation groups to enter the lawsuit as Plaintiffs. These groups were the Alabama Conservancy and the Audubon Society. The Court, on 2 March 1982, entered a Final Judgment permanently enjoining the Corps from proceeding on the basis of the old EIS. This action by the Court was taken without affording the parties an opportunity for a hearing and accordingly, the Government asked the Court to set the Final Judgment aside or to set the case for trial on the merits.

On 27 May 1982, the Court set the Final Judgment aside and directed pretrial discovery to continue. The Plaintiff, State of Alabama, took an appeal to the 11th U.S. Circuit Court of Appeals from the District Court's denial of the State's request to dismiss the lawsuit, since the Corps is performing new studies and eventually a Supplemental EIS. Also, the State filed a motion for the Judge to recuse himself from the case, and the Judge did have the case assigned to another U.S. District Court Judge to avoid any appearance of partiality.

OTHER INFORMATION: (Cont'd)

The State of Alabama's Appeal was dismissed by the 11th U.S. Circuit Court of Appeals. The effect of the dismissal was that the 1976 Injunction remained in effect; however, on 6 February 1984, the District Court dismissed the Luxapalila Creek lawsuit, without prejudice. The Mobile District is proceeding toward preparation of a supplemental EIS, with the Draft SEIS scheduled for coordination with the Environmental Protection Agency (EPA) and other Federal and State agencies in February 1986, and the Final SEIS is scheduled to be filed with EPA in August 1986. As the result of erosion and sloughing of the streambanks along the Twenty Mile Creek in Mississippi, corrective measures along Twenty Mile Creek in Lee, Itawamba, and Prentiss Counties between mile 11.7 and mile 22.0, were authorized by the Supplemental Appropriations and Rescissions Act of 1980 (PL 96-304). The plan of work for Twenty Mile Creek project, which provides for additional channel stabilization measures (stable fences, concrete jacks, and grade control structures), was approved by the Chief of Engineers on 12 August 1981. The construction will be performed in three phases as follows:

Phase I, which provided for two pilot grade control structures with stabilization work, including planting willow trees, has been completed.

Phase II provided protection of Mississippi Highway 362 bridge and construction of grade control structures at Okeelala, Town, and Robinson Creeks which have been completed.

Phase III provided protection for US Highway 45 bridge and county bridges at miles 13.0 and 19.0. Phase III also provides bioengineering bank protection (2 miles) and construction of conventional erosion control, and bank protection measures to the most severely eroded areas along Twenty Mile Creek.

In addition to the corrective measures authorized under PL 96-304, bridge protection measures have also been completed at Mississippi Highway 362 bridges over Wolf and Osborne Creeks, US Highway 45 bridge over Wolf Creek, and Airport Road bridge over Twenty Mile Creek under the General Authority of Section 14 of the Flood Control Act of 1946, as amended. Airport Road is above the Twenty Mile Creek project limits authorized in PL 96-304.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Mobile

Project: Tombigbee River and Tributaries, Mississippi and Alabama

	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	24,000 (Jul 63)		50,000 1/ (Oct 84)		50,000 1/2/ (Oct 85)
Reason for Change		26,000 1/		(0)	
a. Price Escalation		100,764		-567 2/	
b. Design Changes		-89,932			
c. Additional Function Added Under General Authorization		410			
d. Authorized Modification		8,835			
e. Post-Contract Award and Other					
f. Estimating Adjustments Schedule Changes		5,819		87 3/	
g. Sundry		104			
h. Real Estate				480 4/	

NOTE:
1/ Includes allowance for estimated inflation through the construction period.
2/ Includes $567,000 for adjustments in the estimated inflation allowance through the construction period.
3/ Increase ($87,000) due to contract overruns.
4/ Increase ($480,000) for acquisition of real estate beyond original estimate for grade control structures on Twenty Mile Creek.

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REPORTS CONTROL SYMBOL: DAEN-CWB-17

TRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Local Protection Projects (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB 1)

FISCAL YEARS 19 86 AND 19 87

LN NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	LANDS AND DAMAGES	1,567,000	575,000	306,000	186,000	500,000
2	RELOCATIONS	1,402,000	1,402,000			
3	CHANNELS AND CANALS	36,576,900	4,974,000	2,829,000	4,264,000	24,509,900
4	ENGINEERING AND DESIGN	8,498,000	7,329,000	275,000	200,000	694,000
5	SUPERVISION AND ADMINISTRATION	2,048,000	693,000	373,000	250,000	732,000
6						
7	TOTAL APPLIED COST (Fed & Non-Fed Funds)	50,091,900	14,973,000	3,784,000	4,900,000	26,434,900
8	Undistributed Costs - None					
9	TOTAL PROJECT COST (Fed & Non-Fed Funds)	50,091,900	14,973,000	3,784,000	4,900,000	26,434,900
10	Pending Adjustments - None					
11	TOTAL COST (Fed & Non-Fed Funds)	50,091,900	14,973,000	3,784,000	4,900,000	26,434,900
12	Undelivered Orders		1,016,000	-985,000		-31,000
13	TOTAL OBLIGATIONS		15,989,000	2,799,000	4,900,000	26,403,900
14						
15	FEDERAL FUNDS					
16	TOTAL APPLIED COST	50,000,000	14,925,000	3,784,000	4,900,000	26,391,000
17	Undistributed Costs - None					
18	TOTAL PROJECT COST	50,000,000	14,925,000	3,784,000	4,900,000	26,391,000
19	Pending Adjustments - None					
20	TOTAL COST	50,000,000	14,925,000	3,784,000	4,900,000	26,391,000
21	Undelivered Orders		985,000	-985,000		
22	TOTAL OBLIGATIONS		15,910,000	2,799,000	4,900,000	26,391,000
23						
24	NON-FEDERAL FUNDS					
25	TOTAL APPLIED COST	91,900	48,000	-	-	43,900
26	Undistributed Costs - None					
27	TOTAL PROJECT COST	91,900	48,000	-	-	43,900
28	Pending Adjustments - None					
29	TOTAL COST	91,900	48,000	-	-	43,900
30	Undelivered Orders		31,000	-	-	-31,000
31	TOTAL OBLIGATIONS		79,000			12,900
32						
33						

EFFECTIVE DATE	DIVISION South Atlantic	REGION South Atlantic-Gulf	PROJECT
1 Jan 86	DISTRICT Mobile	BASIN Tombigbee	Tombigbee River and Tributaries, MS & AL

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REPORTS CONTROL SYMBOL DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL			CLASSIFICATION: Local Protection Projects (Flood Control)		
SUMMARY CONSTRUCTION PROGRAM (PB-1) FISCAL YEARS 19 86 AND 19 87					
LINE NO. ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 1986	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 1987
(a)	(b)	(c)	(d)	(e)	(f)
1 Method of Financing					
2 Federal Funds					
3 Allocations	50,000,000	16,309,000	2,400,000		
4 Unobligated Carryover from Prior Year			399,000		
5 Total Funds Available for Obligation			2,799,000		
6 Appropriations Required				4,900,000	26,391,000
7					
8 Non-Federal Funds					
9 Contributions	91,900	79,000			
10 Unobligated Carryover from Prior Year					
11 Total Funds Available for Obligation					
12 Contributions Required					12,900
13 Other Costs	2,355,000	1,759,000			596,000
14 Lands and Damages	(793,000)	(746,000)			(47,000)
15 Relocation	(1,562,000)	(1,013,000)			(549,000)
16 Total Non-Federal Costs	2,446,900	1,838,000			608,900
17					
18					
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EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 Jan 86	South Atlantic	South Atlantic-Gulf	Tombigbee River and Tributaries, MS & AL
	DISTRICT Mobile	BASIN Tombigbee	

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APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

PROJECT: B. Everett Jordan Dam and Lake, North Carolina (Continuing)

LOCATION: The project is located on the Haw and New Hope Rivers about 2.5 miles north of Moncure, North Carolina, in Chatham, Durham, Orange, and Wake Counties.

AUTHORIZATION: Public Law 88-253, 30 December 1963

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 2.4 to 1 at 3-1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1967) was 2.7 to 1. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Total Appropriation Requirement		$136,000,000	
Future Non-Federal Reimbursement	$3,900,000		
Estimated Federal Cost (Ultimate)		$132,100,000	
Estimated Non-Federal Cost		3,900,000	
Reimbursement: Water Supply	3,900,000		
Total Estimated Project Cost		$136,000,000	
Allocations to 30 September 1985		$106,049,000	
Conference Allowance for FY 1986		7,500,000	
Allocation for FY 1986		5,600,000 1/	
Allocations to Date		111,749,000	82
Allocation Requested for FY 1987		8,700,000	89
Scheduled Balance to Complete After FY 1987		15,651,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Lands and Damages	99	Aug 1986
Relocations	94	Jul 1986
Reservoir	99	Sep 1986
Dam and Outlet Works	100	Jun 1985
Fish and Wildlife Facilities	29	Jun 1987
Roads	38	Sep 1988
Recreation Facilities	35	Mar 1989
Cultural Resources Preservation	67	Dec 1987
Buildings,Grounds, & Utilities	26	Nov 1987
Permanent Operating Equipment	96	Sep 1986
Entire Project	77	Mar 1989

1/ Reflects $1,900,000 reduction assigned as savings and slippage.

Division: South Atlantic District: Wilmington Region: South Atlantic-Gulf

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B. Everett Jordan Dam and Lake, NC

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PHYSICAL DATA

Dam:
Type - Earth
Height - 112 feet (above streambed)
Length: 1,330 feet

Spillway:
Type - Uncontrolled chute on east abutment
Crest Length - 800 feet

Lands and Damages: Acres: 47,000. Type: Predominantly agricultural and timberland. Improvements: Typical farm units with greater part of area in Orange and Durham Counties rapidly changing from agricultural to homesites, subdivisions and subsistence units.

Reservoir Capacity:	Acre-feet
Flood Control	543,000
Water Supply and Quality Control	147,000
Sedimentation	88,000
Total	778,000

Relocations		
Roads	31.44 miles	($23,836,900)
Railroads	18.50 miles	(5,520,000)
Utility Lines	37.95 miles	(2,648,300)
Cemeteries	43 each	(202,000)
Total		($32,207,200)

JUSTIFICATION: There is an immediate and urgent need for improvements to provide flood protection, water-quality control, and recreation in the Cape Fear Basin, North Carolina. There is also a strong need to provide storage for future municipal and industrial water supply and irrigation, and additional storage for flood control, water-quality control, and recreational needs to keep abreast of economic growth in this region. The average annual damages along the main stem of the Haw, Deep and Cape Fear Rivers are estimated at $8,654,000 at October 1985 price levels over the next 100 years if no flood control facilities are provided. Construction of the B. Everett Jordan Dam and Lake is the initial water resource improvement planned for the Cape Fear River Basin. This project would (1) reduce average annual flood damages along the Cape Fear River by about 74 percent, (2) provide a solution to about 18 percent of the immediate low-flow regulation needs in the basin, and (3) provide an adequate solution to about 35 percent of the long-term recreational needs of the basin. None of the counties in which the project is located are designated as redevelopment areas under Title 4 of PL 89-136, as amended. Average annual benefits are as follows:

Item	Amount (1 Oct 85)
Flood Control	$ 7,254,000
Water Quality Control	1,392,000
Water Supply	523,000
Recreation	4,213,000
Area Redevelopment	319,000
	$13,701,000

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FISCAL YEAR 1987: The requested amount will be applied as follows:

Complete Fish and Wildlife Facilities	$1,435,000
Continue Roads	160,800
Continue Recreation Facilities	5,654,200
Continue Cultural Resources Preservation	200,000
Continue Buildings, Grounds, & Utilities	450,000
Engineering and Design	300,000
Supervision and Administration	500,000
Total	$8,700,000

NON-FEDERAL COST: The estimated cost to the local sponsor, the State of North Carolina, of complying with the requirements of local cooperation for construction of the project, as set forth in the authorizing legislation, is $3,900,000 for all costs allocated to municipal and industrial water supply including an adjustment in the estimated inflation allowance through the construction period.

Local interests are also required to provide all operation, maintenance and major replacements allocated to municipal and industrial water supply, estimated to cost $38,000 annually.

In addition, the State of North Carolina has leased the B. Everett Jordan project for public park, recreational, fish, wildlife, and other natural resource management purposes. Under this lease, the State is responsible for the operation and maintenance of the project for the above purposes, estimated to cost $772,000 annually.

STATUS OF LOCAL COOPERATION: The State of North Carolina furnished assurances by letter dated 2 November 1966. They were accepted by the District Engineer the same month.

On 7 October 1981, the Governor signed a 50-year Department of the Army lease for the B. Everett Jordan project for public park, recreational, fish, wildlife, and other natural resource management purposes on behalf of the State of North Carolina.

A contract between the State of North Carolina and the United States for water supply storage space is required and is currently under review by the North Carolina Department of Natural Resources and Community Development. It is anticipated that the contract will be executed during the summer of 1986.

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COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $136,000,000 reflects no change from the latest estimate ($136,000,000) submitted to Congress (FY 86). Internal adjustments reflect a decrease of $1,059,000 for adjustments in the estimated inflation allowance through the construction period; and increase of $624,000 for design changes involving additional real estate for relocation of Public Service Gas Line ($81,000), erosion control at access areas ($254,700), riprap repair and breakwater at Crosswinds Marina ($298,800) and a decrease for miscellaneous items (-$10,500); an increase of $306,000 for additional function added under general authorization involving cultural resources preservation; an increase of $10,000 for post contract award and other estimating adjustments involving final contract payments and litigation expenses; and an increase of $119,000 involving real estate audit work ($19,000) and addition of a power line previously inadvertently deleted ($100,000).

STATUS OF ENVIRONMERTAL STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final EIS was filed with CEQ in October 1971. The provisions of Section 404 of the Clean Water Act were met by a Section 404(b)(1) Evaluation, issuance of a Public Notice, a Certification from the State of North Carolina, 8 April 1982, and the District Engineer's signature on the Evaluation Report, 28 July 1982.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1964 and for construction in FY 1967.

FILLING OF RESERVOIR: Reservoir filling was initiated in September 1981 and completed in February 1982. Dedication ceremonies were held on 1 May 1982.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Wilmington

Project: B. Everett Jordan Dam and Lake, NC

	Estimates Presented to Congress ($1,000)				
	Original Baseline	Cumulative Changes	Last	Incremental Change	Current
Federal Cost (Price Level)	$29,500 (Jul 1965)		$136,000[5/] (Oct 1984)		$136,000[5/6/] (Oct 1985)
Reason for Change		($106,500)[6/]		($ 0)[5/]	
a. Price Escalation		45,049		- 1,059	
b. Design Change		41,875		624[1/]	
c. Additional Function Added Under General Authorization		80		306[2/]	
d. Authorized Modification					
e. Post-Contract Award and Other Estimating Adjustments		1,993		10[3/]	
f. Schedule Changes		224			
g. Sundry		5,843		119[4/]	
h. Real Estate		11,436			

NOTE:

1/Increase of $624.0 includes the following: Addition of real estate tract necessitated by change in alignment of Public Service Gas Line (+$81.0); addition of dam gate position indicators, not previously included (+$4.2); installation of vault toilets not previously included at Poes Ridge (+$2.5); and Ebenezer Church (+$4.3); paving of access areas, installation of curb and gutters and erosion control measures to prevent further deterioration to existing gravel facility due to greater than anticipated use at Poes Ridge (+$93.9) and Farrington (+$160.8); addition of cross-tie borders around picnic tables to prevent erosion and level sites at Vista Point (+$4.1); repairing eroded slopes at Crosswinds Marina due to discharge of surface runoff and installation of a floating tire breakwater to provide protection to the marina area for damaging wind generated waves (+$298.8); and a decrease in miscellaneous maintenance equipment based on initial requirement not being as great as projected (-$25.6).
2/Increase of $306.0 includes the following: Remedial work to stabilize the Mason House (+$6.0); and rehabilitation of the Mason House in accordance with the findings of the N. C. State Historic Preservation Officer (+$300.0).

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE--Continued

3/Increase of $10.0 includes the following: Increase for overrun in earthwork quantities on NC 751 and 1731 (+$3.3); final contact payments (+$18.0); and a decrease based on final litigaton on NC 1715 and 1941 (-$1.5) and initial clearing (-$9.8).
4/Increase of $119.0 includes the following: Audit work for permanent realty records not previously included (+$19.0); and addition of primary feeder line inadvertently deleted from Parkers Creek area (+$100.0).
5/Includes decrease of $1,059.0 for adjustments in the estimated inflation allowance through the construction period.
6/Includes an allowance for estimated inflation through the construction period.

REPORTS CONTROL SYMBOL DAEN-CWR-LE

APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: RESERVOIRS (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	LANDS AND DAMAGES	26,120,000	25,966,400	153,600	-	-
2	RELOCATIONS	32,207,200	30,286,500	1,690,000	-	230,700
3	RESERVOIRS	6,432,300	6,407,300	25,000	-	-
4	DAMS	9,485,700	9,494,100	-8,700	-	300
5	FISH AND WILDLIFE FACILITIES	6,383,000	762,700	3,687,100	1,435,000	498,200
6	ROADS	1,328,600	444,800	9,200	160,800	713,800
7	RECREATION FACILITIES	30,618,300	10,661,400	1,786,800	5,654,200	12,515,900
8	CULTURAL RESOURCES PRESERVATION	891,800	593,900	-6,300	200,000	104,200
9	BUILDINGS, GROUNDS, AND UTILITIES	1,592,800	405,200	270,500	450,000	467,100
10	PERMANENT OPERATING EQUIPMENT	612,200	587,700	10,200	-	14,300
11	ENGINEERING AND DESIGN	13,860,400	12,934,200	500,000	300,000	126,200
12	SUPERVISION AND ADMINISTRATION	6,467,700	4,588,600	400,000	500,000	979,100
13						
14	TOTAL APPLIED COST (Fed. Funds Only)	136,000,000	103,132,800	8,517,400	8,700,000	15,649,800
15	Undistributed Costs		-1,600	-	-	+1,600
16	TOTAL PROJECT COST (Fed. Funds Only)	136,000,000	103,131,200	8,517,400	8,700,000	15,651,400
17	Pending Adjustments (None)					
18	TOTAL COST (Fed. Funds Only)	136,000,000	103,131,200	8,517,400	8,700,000	15,651,400
19	Undelivered Oders		+2,916,600	-2,916,600	-	-
20	TOTAL OBLIGATIONS	136,000,000	106,047,800	5,600,800	8,700,000	15,651,400
21						
22	METHOD OF FINANCING					
23	FEDERAL FUNDS					
24	ALLOCATIONS	136,000,000	106,048,600	5,600,000 1/		
25	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			800		
26	TOTAL FUNDS AVAILABLE FOR OBLIGATION			5,600,800		
27	APPROPRIATIONS REQUIRED				8,700,000	15,651,400
28						
29	1/REFLECTS $1,900,000 REDUCTION ASSIGNED					
30	AS SAVINGS AND SLIPPAGE.					
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 JAN 86	SOUTH ATLANTIC	SOUTH ATLANTIC-GULF	B. EVERETT JORDAN DAM AND LAKE, NC
	DISTRICT WILMINGTON, NC	BASIN CAPE FEAR	

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APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

PROJECT: Falls Lake, North Carolina (Continuing)

LOCATION: The project is located on the Neuse River about 10 miles north of Raleigh, North Carolina, in Durham, Granville, and Wake Counties.

AUTHORIZATION: Flood Control Act of 1965.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 2.0 to 1 at 3-1/4 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial land acquisition funds (FY 1970) was 2.1 to 1. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

			Accum. % of Est. Fed. Cost
Estimated Total Appropriation Requirement		$168,000,000	
Future Non-Federal Reimbursement	$34,000,000		
Estimated Federal Cost (Ultimate)		$134,000,000	
Estimated Non-Federal Cost		34,000,000	
Reimbursement:			
Water Supply	12,400,000		
Recreation and Fish and Wildlife Enhancement	21,600,000		
Total Estimated Project Cost		$168,000,000	
Allocations to 30 September 1985		$132,321,000	
Conference Allowance for FY 1986		6,500,000	
Allocation for FY 1986		4,500,000 1/	
Allocations to Date		136,821,000	81
Allocation Requested for FY 1987		6,500,000	85
Scheduled Balance to Complete After FY 1987		24,679,000	
Unscheduled Balance to Complete After FY 1987		0	

1/ Reflects $2,000,000 reduction assigned as savings and slippage.

STATUS: (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Lands and Damages	99	Sep 1986
Relocations	99	Oct 1989
Reservoir	99	Sep 1986
Dam and Outlet Works	100	Mar 1985
Fish and Wildlife Facilities	0	Sep 1989
Roads	59	Jun 1988
Recreation Facilities	19	Dec 1990
Cultural Resources Preservation	35	Sep 1987
Buildings, Grounds and Utilities	45	Dec 1988
Permanent Operating Equipment	90	Sep 1986
Entire Project	78	Dec 1990

Division: South Atlantic

District: Wilmington

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Region: South Atlantic-Gulf
Falls Lake, NC

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PHYSICAL DATA

Dam:
Type - Earth
Height - 92 feet (above streambed)
Length - 1,915 feet

Spillway:
Type - Uncontrolled chute on north abutment
Crest length - 100 feet

Lands and Damages: Acres: 38,526. Type: Predominantly agricultural and timberland. Improvements: Typical farm units with greater part of area in Durham and Wake Counties rapidly changing from agricultural to homesites, subdivisions, and subsistence units.

Reservoir Capacity:	Acre-feet
Flood Control	243,000
Water Supply and Quality Control	116,000
Sedimentation	38,000
Total	397,000

Relocations		
Roads	16.24 miles	($17,293,800)
Railroads	6.79 miles	(4,961,100)
Utility Lines	54.42 miles	(4,734,700)
Cemeteries	35 each	(334,800)
Total		($27,324,400)

JUSTIFICATION: There is an immediate need for improvements to provide flood protection, local water supply, water-quality control, and recreation in the Neuse River Basin, North Carolina. The average annual damages along the main stem of the Neuse River below the Falls damsite are estimated at $3,231,000 over the next 100 years if no flood control facilities are provided. A major flood in the Neuse River Basin in October 1964 inundated approximately 107,000 acres of land and caused agricultural and urban damages along the main stem of the Neuse River estimated at $3,796,000 (1964 price levels) which would amount to $15,131,000 under 1971 conditions of development and October 1985 price levels, of which $5,957,000 would be prevented by the project. Construction of the Falls project is the initial water-resource improvement planned for the Neuse River Basin. The City of Raleigh has expended $7,600,000 on construction of facilities for obtaining a reliable supply of water from the Neuse River at an intake location within Falls Lake. These facilities were completed in July 1967 and provided for a 25 million gallon daily capacity. An additional $30,000,000 has been expended for expansion of the treatment facilities to a capacity of 62.5 million gallons per day (mgd). The facility was put in operation in the fall of 1984 and is anticipated to provide an adequate supply of water until the mid-1990's, at which time the plant would be expanded to an ultimate capacity of 100 mgd.

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JUSTIFICATION:--Continued

The Falls project will: (1) reduce average annual flood damages along the main stem of the Neuse River below the damsite by about 50 percent, (2) alleviate a critical water supply problem in the basin by providing a source for municipal and industrial water supply for the City of Raleigh and counties in the area, (3) provide a solution to the immediate and long term lowflow regulation needs, and (4) provide an adequate solution to the immediate recreational needs of the basin. None of the counties in which the project is located are designated as redevelopment areas under Title 4 of PL 89-136, as amended. Average annual benefits are as follows:

Item	Amount (1 Oct 85)
Flood Control	$ 2,181,000
Water Quality Control	1,575,000
Water Supply	1,260,000
Recreation	5,915,000
Area Redevelopment	227,000
Total	$11,158,000

FISCAL YEAR 1987: The requested amount will be applied as follows:

Continue Railroad Relocation (Deferred Maintenance)	$ 12,000
Initiate Fish and Wildlife Facilities	400,000
Continue Roads	226,200
Continue Recreation Facilities	3,994,200
Complete Cultural Resources Preservation	39,500
Continue Buildings, Grounds and Utilities	908,500
Engineering and Design	619,600
Supervision and Administration	300,000
Total	$ 6,500,000

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Falls Lake, NC

NON-FEDERAL COST: The estimated cost to the local sponsor, the State of North Carolina, of complying with the requirements of local cooperation for construction of the project, as set forth in the authorizing legislation, is $34,000,000, including an adjustment in the estimated inflation allowance through the construction period. Local interests are required to provide reimbursement for all of the cost of construction allocated to water supply, 50 percent of the cost for development of recreation facilities and 25 percent of the cost of fish and wildlife enhancement. A breakdown of the estimated non-Federal cost is as follows:

Reimbursement:	
Water Supply	$12,400,000
Recreation	20,800,000
Fish and Wildlife	800,000
Total	$34,000,000

In addition, local interests have incurred costs of $40,100,000 for water supply in the project area.

Local interests are also responsible for all the annual operation, maintenance, and major replacements for water supply estimated at $89,000. Further, local interests are required to provide 100 percent of operation, maintenance, and major replacements for separable general recreation and fish and wildlife facilities at an estimated annual cost of $1,140,000 and $84,000, respectively.

STATUS OF LOCAL COOPERATION: A contract between the City of Raleigh and the United States for water-supply storage space was executed by the City and the District Engineer on 23 February 1972 and the contract was approved by the Secretary of the Army on 11 September 1972. A contract agreement for cost sharing of recreational lands and facilities in accordance with Public Law 89-72 was signed by the Governor of North Carolina and the District Engineer 15 August 1972 and was approved by the Secretary of the Army on 11 September 1972. A local assurance agreement pursuant to Section 221 of the River and Harbor and Flood Control Act of 1970 (PL 91-611) was signed by the Governor of North Carolina and the District Engineer on 10 October 1972.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $168,000,000 is an increase of $1,000,000 over the latest estimate ($167,000,000) submitted to Congress (FY 1986). This change includes an increase of $18,000 for adjustments in the estimated inflation allowance through the construction period; an increase of $641,000 for design changes involving erosion repairs at boating access areas; an increase of $226,000 for post-contract award and other estimating adjustments involving litigation expenses ($285,000), and a decrease for other adjustments (-$59,000); and an increase of $115,000, including ($3,000) for real estate audits, and reevaluation of reservoir storage capacities ($112,000).

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STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final environmental impact statement was filed with CEQ on 15 April 1971. An updated final statement was filed with CEQ on 1 May 1974.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation, a Public Notice issued on 23 December 1976, a Certification issued by the State of North Carolina on 19 April 1978, and the District Engineer's signature on the Section 404(b) Report 17 May 1978.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1966. Land acquisition only funds were appropriated in FY 1970 and were allotted in FY 1971. Funds to initiate construction were appropriated in FY 1971.

RESERVOIR FILLING: Filling was initiated on 13 January 1983. In order for work on the last boat ramps to be completed in the dry, the lake elevation was held at 247 feet m.s.l. or 3 feet below conservation pool until 21 June 1983. Filling was further delayed due to low rainfall in the Neuse River Basin during the summer of 1983. The lake reached normal pool elevation of 250.1 feet m.s.l. on 7 December 1983.

RESERVOIR STORAGE: A survey of Falls Lake in 1982 for future sedimentation accounting purposes subsequently resulted in a discovery of reservoir storage shortages. Areas and capacities of the lake are somewhat less than originally determined. Technical studies are in progress to assess the effects of shortages on intended purposes of the project and to modify the operation plan, if necessary, to minimize or restore benefit reductions. Falls Lake is being operated on an interim basis at a rule curve elevation of 251.0 feet m.s.l. which is 0.9 foot higher than normal.

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Falls Lake, NC

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Wilmington

Project: Falls Lake, North Carolina

	Estimates Presented to Congress ($1,000)				
	Original Baseline	Cumulative Changes	Last	Incremental Changes	Current
Federal Cost (Price Level)	$29,600 (Jul 1969)		$167,000[3] (Oct 1984)		$168,000[4/5] (Oct 1985)
Reason for Change		($137,400)[5]		($ 1,000)[4]	
a. Price Escalation		50,163		18	
b. Design Change		44,174		641[1]	
c. Additional Function Added Under General Authorization					
d. Authorized Modification		586			
e. Post-Contract Award and Other Estimating Adjustments		-4,119		226[2]	
f. Schedule Changes		999			
g. Sundry		7,258		115[3]	
h. Real Estate		38,339			

NOTE:

[1] Increase of $641.0 on boating access areas based on requirement to repair erosion damage in parking areas and to install curb and gutter ditches to prevent future erosion.

[2] Increase of $226.0 includes the following: Increased litigation expense for Servidone Construction Company dam contract (+$285.0); and decreases for final contract payments (-$32.5); reduced scope of work for removal of initial flotation (-$5.1); decrease in equipment requirements for water quality monitoring equipment (-$15.0), sedimentation measuring equipment (-$3.4), and hydrologic data collection equipment (-$3.0).

[3] Increase of $115.0 includes the following: Increase for audit work for permanent real estate records not previously included (+$3.0); and reevaluation of reservoir storage capacities due to storage shortages discovered during installation of sedimentaion monuments (+$112.0).

[4] Includes an increase of 18.0 for adjustments in the estimated inflation allowance through the construction period.

[5] Includes an allowance for estimated inflation through the construction period.

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Falls Lake, NC

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: RESERVOIRS (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LN NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	LANDS AND DAMAGES	63,629,000	62,219,400	1,409,600	-	-
2	RELOCATIONS	27,324,400	27,135,300	12,000	12,000	165,100
3	RESERVOIRS	7,276,300	7,261,500	14,800	-	-
4	DAMS	10,504,600	10,512,100	-14,800	-	7,300
5	FISH AND WILDLIFE FACILITIES	3,838,000	-	-	400,000	3,438,000
6	ROADS	701,000	498,400	-85,000	226,200	61,400
7	RECREATION FACILITIES	32,281,200	5,954,200	3,561,000	3,994,200	18,771,800
8	CULTURAL RESOURCES PRESERVATION	374,800	132,000	-	39,500	203,300
9	BUILDINGS, GROUNDS, AND UTILITIES	2,859,900	1,251,000	45,800	908,500	654,600
10	PERMANENT OPERATING EQUIPMENT	394,300	354,200	40,100	-	-
11	ENGINEERING AND DESIGN	12,831,500	10,975,700	914,800	619,600	321,400
12	SUPERVISION AND ADMINISTRATION	5,985,000	4,071,500	500,000	300,000	1,113,500
13						
14	TOTAL APPLIED COST (Fed. Funds Only)	168,000,000	130,365,300	6,398,300	6,500,000	24,736,400
15	Undistributed Costs		+57,400	-	-	-57,400
16	TOTAL PROJECT COST (Fed. Funds Only)	168,000,000	130,422,700	6,398,300	6,500,000	24,679,000
17	Pending Adjustments (None)					
18	TOTAL COST (Fed. Funds Only)	168,000,000	130,422,700	6,398,300	6,500,000	24,679,000
19	Undelivered Oders		+1,742,000	-1,742,000	-	-
20	TOTAL OBLIGATIONS	168,000,000	132,164,700	4,656,300	6,500,000	24,679,000
21						
22	METHOD OF FINANCING					
23	FEDERAL FUNDS					
24	ALLOCATIONS	168,000,000	132,321,000	4,500,000 1/		
25	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			156,300		
26	TOTAL FUNDS AVAILABLE FOR OBLIGATION			4,656,300		
27	APPROPRIATIONS REQUIRED				6,500,000	24,679,000
28						
29	1/REFLECTS $2,000,000 REDUCTION ASSIGNED					
30	AS SAVINGS AND SLIPPAGE.					
31						
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 JAN 86	SOUTH ATLANTIC	SOUTH ATLANTIC-GULF	FALLS LAKE, NC
	DISTRICT WILMINGTON, NC	BASIN NEUSE	

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APPROPRIATION TITLE: Construction, General - Local Protection Projects (Flood Control)

PROJECT: Portugues and Bucana Rivers, Puerto Rico (Continuing)

LOCATION: The improvements are in and near Ponce on the Portugues and Bucana Rivers on the south coast of Puerto Rico.

AUTHORIZATION: Flood Control Act of 1970.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 3.9 to 1 at 5 5/8%. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1975) was 1.6 to 1. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

			Accum. % of Est. Fed. Cost (C of E)
Estimated Total Appropriation Requirement		$317,000,000	
Future Non-Federal Reimbursement	114,888,000		
Estimated Federal Cost (Ultimate)		$202,112,000	
Estimated Non-Federal Cost Reimbursement		200,888,000	
Water Supply	$113,402,000		
Recreation	1,486,000		
Other	86,000,000		
Total Estimated Project Cost		$403,000,000	
Allocations to 30 September 1985		$120,426,000	
Conference Allowance for FY 1986		25,000,000	
Allocation for FY 1986		19,800,000 1/	
Allocations to Date		140,226,000	44
Allocation Requested for FY 1987		31,000,000	54
Scheduled Balance to Complete After FY 1987		145,774,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS (1 January 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Channels and Canals		
Lower Channels	100	Aug 1978
Upper Bucana Channel	100	Jun 1983
Upper Portugues Channel	65	Dec 1986
Bucana River Debris Basin	60	Mar 1986
Portugues Debris Basin	15	Mar 1988
Dams		
Cerrillos Structure & Machinery	26	Sep 1990
Portugues Structure & Machinery	0	Jun 1993
Recreation	0	Sep 1990
Entire Project	38	Jun 1993

1/ Reflects $5,200,000 reduction assigned as savings and slippage.

Division: South Atlantic

District: Jacksonville

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Region: Puerto Rico-Virgin Islands
Portugues and Bucana Rivers, Puerto Rico

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PHYSICAL DATA

	Portugues River	Cerrillos River
Dam		
Type	Concrete arch	Earth & rock-filled
Height	274 feet	323 feet
Crest Length	1,600 feet	1,555 feet
Spillway		
Type	Ungated concrete ogee 150' wide	Ungated rock cut 400' wide
Reservoir Capacity (Acre-Feet)		
Flood Control	8,342	17,065
Water Supply	14,000	25,200
Sediment	2,841	5,635
Total	25,183	47,900
Portugues River Channel Enlargement		2.1 miles
Bucana River Channel Enlargement		5.7 miles
Diversion Channel connecting Portugues River to the Lower Bucana River		1.3 miles

JUSTIFICATION: Water supply is a need met by the Portugues and Bucana Rivers project. The water storage capacity in Lake Cerrillos is 25,200 acre-feet while ongoing studies have established a preliminary capacity for Lake Portugues of 14,000 acre-feet. Primary uses of the water supply will be municipal and industrial. The 1954 flood caused damages of $1,297,000 ($6,550,000 at 1985 price levels). Minor flooding occurs almost yearly and major floods occur every 5 years on the average. The mountainous terrain above Ponce permits rapid runoff into the rivers which overflow in the lower elevation flood plains in Ponce causing loss of life and extensive property damage. Other major damaging floods occurred in 1961 ($4,619,000 at 1985 price levels), 1970 ($2,038,000 at 1985 price levels), and in 1975 ($33,017,000 at 1985 price levels). The average degree of protection provided by the completed project will be the standard project

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JUSTIFICATION (Cont'd):

flood frequency. Upon completion, 6,415 acres will be protected, including 4,310 agricultural acres, 1,855 urban acres, and 250 acres undeveloped.

Present value of property subject to flood damages is $584,000,000. Average annual flood damages preventable are all attributable to existing urban development.

The entire island of Puerto Rico has been designated a redevelopment area under subsection (2) of Section 401(a) of Public Law 89-136.

Breakdown of average annual benefits:

Item	Amount (1 Oct 1985)
Flood control	$ 20,800,000
Water supply	12,108,000
Recreation	1,088,000
Area redevelopment	1,218,000
TOTAL	$ 35,214,000

FISCAL YEAR 1987: The requested amount will be applied as follows:

Continue Construction of Bucana River Debris Basin Excavation	$ 540,000
Continue Construction of Upper Portugues Channels	1,761,000
Continue Construction of Cerrillos Dam Structure, Gates, Access Road, and Spillway Bridge	18,400,000
Continue Construction of Portugues Debris Basin	6,202,000
Initiate Lower Bucana Channel Recreation Construction	1,000,000
Engineering and Design	1,304,000
Supervision and Administration	1,793,000
TOTAL	$ 31,000,000

Portugues and Bucana Rivers, Puerto Rico

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NON-FEDERAL COST: The estimated cost to the local sponsor, the Commonwealth of Puerto Rico Department of Natural Resources, of complying with the requirements of local cooperation for construction of the improvement as set forth in the authorizing legislation is $200,888,000 including an adjustment in the estimated inflation allowance through the construction period. Local interests are required to provide lands, easements, and rights-of-way; 50 percent of the cost for development of recreation facilities; and 100 percent reimbursement for the costs allocated to water supply. The estimated non-Federal cost is as follows (1 Oct 1985):

Lands and damages	$ 64,600,000
Relocations	13,300,000
Highway bridges	8,100,000
Reimbursement	
Water supply	113,402,000
Recreation	1,486,000
TOTAL	$ 200,888,000

Local interests are also required to operate and maintain the project upon completion. The estimated annual cost of operation and maintenance is $1,498,000.

STATUS OF LOCAL COOPERATION: The Commonwealth of Puerto Rico Department of Natural Resources is the local sponsor. The following contract agreements are required pursuant to Section 221 of the River and Harbor and Flood Control Act of 1970 (PL 91-611):

Contract		Actual or Anticipated Execution Date
Local Assurances		
Section 221 -	Cerrillos Reservoir	15 March 1982
	Portugues Reservoir	2nd Qtr FY 86
	Channels	22 July 1974
Water Supply -	Cerrillos Reservoir	15 March 1982
	Portugues Reservoir	2nd Qtr FY 86
Recreation -	Cerrillos Reservoir	15 March 1982
	Portugues Reservoir	2nd Qtr FY 86
	Channels	2nd Qtr FY 86

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COMPARISON OF FEDERAL COST ESTIMATES: The current Federal (Corps of Engineers) cost estimate of $317,000,000 is a decrease of $9,000,000 from the latest estimate ($326,000,000) submitted to Congress (FY 1986). This change includes a decrease of $6,522,000 for adjustments in the estimated inflation allowance through the construction period; a decrease of $2,478,000 for post-contract award adjustments including a contract underway for Lake Cerrillos Dam Tunnel and Outlet Works Excavation increased drilling costs and rockbolting efforts at Intake Structure Foundation (+$525,800), modify two vertical surfaces and stabilization of area outside limits of excavation at Intake Structure (+$770,200) and excavation overrun at left abutment and access road (+$704,000); favorable bid on remaining Bucana Debris Basin (-$2,215,900); favorable action on completed contract for Outlet Structure in Bucana Debris Basin (-$68,100); and other estimating adjustments due to previous bid experience on similar canal work resulting in a decrease in cost on remaining Upper Portugues Channel (-$2,194,000).

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final EIS was filed with CEQ in September 1970. An updated final statement was filed with CEQ on 25 February 1974.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation signed by the District Engineer on 5 October 1978, a Public Notice was issued on 28 September 1978, and a Water Quality Certification from the Commonwealth of Puerto Rico was issued on 12 December 1978. A Water Quality Certification for the Cerrillos Dam was issued on 4 March 1982 and one is scheduled for the Portugues Dam in 2nd Quarter FY 1986.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in Fiscal Year 1972. Funds to initiate construction were appropriated in Fiscal Year 1975.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Atlantic
District: Jacksonville

Project: Portugues and Bucana Rivers, Puerto Rico

Item	Original Baseline	Estimates Presented to Congress ($1,000) Cumulative Changes	Last	Incremental Change	Current
Federal Cost (Price Level)	$92,900 (July 1973)		$326,000 2/ (Oct 1984)		$317,000 1/2/ (Oct 1985)
Reason for Change		(233,100) 2/		(-9,000) 1/	
a. Price Escalation		154,813		-6,522	
b. Design Changes		80,217			
c. Additional Functions Added Under General Authority		-		-	
d. Authorized Modifications		-		-	
e. Post-Contract Award and Other Estimating Adjustments		-2,253		-2,478 3/	
f. Schedule Changes		-		-	
g. Sundry		323		-	
h. Real Estate		-		-	

NOTE: 1/ Includes a decrease of $6,522 for adjustments in the estimated inflation allowance through the construction period.
2/ Includes an allowance for estimated inflation through the construction period.
3/ Decrease of $2,478 for post-contract award adjustments including a contract underway for Lake Cerrillos Dam Tunnel and Outlet Works Excavation increased drilling costs and rockbolting efforts at Intake Structure Foundation (+$526), modify two vertical surfaces and stabilization of area outside limits of excavation at Intake Structure (+$770) and excavation overrun at left abutment and access road (+$704); favorable bid on remaining Bucana Debris Basin (-$2,216), favorable action on completed contract for Outlet Structure in Bucana Debris Basin (-$68); and other estimating adjustments due to previous bid experience on similar canal work resulting in a decrease in cost for remaining Upper Portugues Channel (-$2,194).

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REPORTS CONTROL SYMBOL DAEM-CWB-E

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: Local Protection Project (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB 1)
FISCAL YEARS 19 86 AND 19 87

No.	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Lands & Damages	1,590,000	3,000	-	-	1,587,000
2	Relocations	491,000	-	-	-	491,000
3	Reservoirs	2,628,000	-	-	-	2,628,000
4	Dams	177,951,000	31,049,000	12,100,000	17,000,000	117,802,000
5	Road s & Bridges	2,769,000	-	-	1,400,000	1,369,000
6	Channels & Canals	64,105,000	44,357,000	6,477,000	8,473,000	4,798,000
7	Recreation Facilities	8,440,000	-	-	1,000,000	7,440,000
8	Cultural Resources	512,000	304,000	208,000	-	-
9	Building Grounds & Utilities	498,000	498,000	-	-	-
10	Engineering & Design	36,611,000	31,750,000	1,622,000	1,304,000	1,935,000
11	Supervision & Administration	21,405,000	10,503,000	1,355,000	1,823,000	7,724,000
12						
13	Total Applied Cost (Fed Funds Only)	317,000,000	118,464,000	21,762,000	31,000,000	145,774,000
14	Undistributed Cost (None)					
15	Total Project Cost (Fed Funds Only)	317,000,000	118,464,000	21,762,000	31,000,000	145,774,000
16	Pending Adjustment (None)					
17	Total Cost (Fed Funds Only)	317,000,000	118,464,000	21,762,000	31,000,000	145,774,000
18	Undelivered Orders		(1)1,922,000	(-)1,922,000		
19	Total Obligations		120,386,000	19,840,000	31,000,000	145,774,000
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EFFECTIVE DATE	DIVISION: SOUTH ATLANTIC	REGION: PUERTO RICO-VIRGIN ISL	PROJECT: PORTUGUES & BUCANA RIVERS, PUERTO RICO
13 JAN 1986	DISTRICT: JACKSONVILLE	BASIN: PUERTO RICO	

ENG FORM 1 SEP 76 2200 (ER 11-2-260) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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REPORTS CONTROL SYMBOL

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: Local Protection Project (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO.	ITEM (a)	PROJECT COST ESTIMATE (b)	TOTAL TO 30 SEP 19 85 (c)	CURRENT FY 19 86 (d)	BUDGET FY 19 87 (e)	BALANCE TO COMPLETE AFTER FY 19 87 (f)
1	Method of Financing					
2	Federal Funds					
3	Allocations	317,000,000	120,426,000	19,800,000 1/		
4	Unobligated Carryover from Prior Year			40,000		
5	Total Funds Available for Obligation			19,840,000		
6	Appropriation Required				31,000,000	145,774,000
7	Lands & Damages	64,600,000	21,550,000	11,800,000	8,100,000	23,150,000
8	Relocations	13,300,000	4,440,000	2,400,000	1,700,000	4,760,000
9	Highway Bridges	8,100,000	2,700,000	1,500,000	1,000,000	2,900,000
10	Total Non-Federal Costs	86,000,000	28,690,000	15,700,000	10,800,000	30,810,000
11						
12						
13						
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15						
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29	1/ Reflects $5,200,000 reduction assigned as Savings & Slippage.					
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION: SOUTH ATLANTIC	REGION: PUERTO RICO-VIRGIN ISL	PROJECT: PORTUGUES & BUCANA RIVERS, PUERTO RICO
13 JAN 1986	DISTRICT: JACKSONVILLE	BASIN: PUERTO RICO	

ENG FORM 6 SEP 76 2200 (ER 11-2-260) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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APPROPRIATION TITLE: Construction General - Multiple Purpose Power Projects

PROJECT: Richard B. Russell Dam & Lake, Georgia & South Carolina (continuing)

LOCATION: On the Savannah River about 275 miles above the mouth, 16 miles southeast of Elberton, Georgia and between the existing Clarks Hill and Hartwell Lakes.

AUTHORIZATION: Flood Control Act of 1966, modified by the Water Resources Development Act of 1976.

BENEFIT-COST RATIO: The Remaining Benefit - Remaining Cost Ratio is 3.8 to 1 at 3¼ percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial land acquisition funds (FY 1972) was 2.0 to 1. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1975) was 1.9 to 1. The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost
Estimated Total Approp. Requirement		$541,000,000
Future Non-Federal Reimbursement	$518,247,000	
Estimated Federal Cost (Ultimate)		22,753,000
Estimated Non-Federal Cost		518,247,000
Reimbursements:		
Power	$502,597,000	
Recreation	15,650,000	
Total Estimated Project Cost		
		$541,000,000
Allocation to 30 Sep 1985		$417,490,000
Conference Allowance for FY 1986		23,000,000
Allocation for FY 1986		19,900,000 1/
Allocations to Date		437,390,000 81
Allocation Requested for FY 1987		25,000,000 87
Scheduled Balance to Complete after FY 1987		78,610,000
Unscheduled Balance to Complete after FY 1987		0

STATUS:(1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Lands and Damages	99	Mar 1987
Relocations	91	Sep 1988
Reservoir	76	Mar 1991
Dam	100	Oct 1985
Fish & Wildlife Activ.	1	Sep 1990
Powerplant	69	Jun 1991
Roads	38	Sep 1989
Recreation	28	May 1990
Cultural Resources	97	Sep 1986
Bld.,Grnds.,Util.	62	Dec 1986
Perm. Oper. Equip.	70	Sep 1987
Entire Project	78	Jun 1991
Power-on-Line, Unit 1		Jan 1985
Power-on-Line, Unit 2		Feb 1985
Power-on-Line, Unit 3		Jul 1985
Power-on-Line, Unit 4		Jan 1986
Power-on-Line, Unit 5(Pump Stor.)		Feb 1990
Power-on-Line, Unit 6(Pump.Stor.)		May 1990
Power-on-Line, Unit 7(Pump.Stor.)		Aug 1990
Power-on-Line, Unit 8(Pump.Stor.)		Nov 1990

1/ Reflects $3,100,000 reduction assigned as savings & slippage.

DIVISION: South Atlantic DISTRICT: Savannah

REGION: South Atlantic
Richard B. Russell Dam and Lake, GA & SC

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PHYSICAL DATA

Dam:
Type - Concrete gravity, flanked by earth embankmsnts
Maximum Height - 200 feet
Length - Concrete section 1,884 feet; embankments 3,732 feet; total 5,616 feet

Relocations:

Roads - 19.5 miles	($32,784,000)
Railroads-(SCL RR) 9.1 miles	($34,455,000)
Cemeteries, Util. Lines and Water Supply Pump Stations	($ 5,229,000)

Lands and Damages:
Acres - 53,112
Type - Predominantly timber and agricultural
Improvements - Typical farm units

Spillway:
Type - Gate Controlled
Design Capacity - 800,000 c.f.s.

Power Installation:
Initial Installation:

4 Conventional Units
@ 75,000 kw and 4 pumped storage units
@ 75,000 kw; 600,000 kw
Normal average head - 144 feet

Reservoir Capacity (Acre-feet)

Flood Control	140,000
Power	126,800
Dead Storage	899,400
Total	1,166,200

JUSTIFICATION: The initial 600,000 kw installation including pumped storage, will help meet the increased power requirements and rapid growth demands in this region. The output can be marketed and fully utilized immediately upon project completion in Federal Energy Regulatory Commission (FERC) supply areas 21, 22 and 23. This includes all of South Carolina, most of North Carolina, Georgia, Alabama, and parts of Mississippi and Florida. The FERC has stated repeatedly the need for this power source.

This project will be an integral unit of the plan for development of the Savannah River Basin for flood control, navigation, power, and allied purposes. The recreational facilities will serve an area within a large zone of influence surrounding the three-lake complex of Clarks Hill, Hartwell and Richard B. Russell Lakes. The estimated initial attendance at the project will approach 1,000,000 and should exceed 4,600,000 in the early 2000's.

Counties located within reasonable commuting distance of the project designated as redevelopment areas under Section 401(a) of Public Law 89-136 are Abbeville, Anderson, Edgefield, Greenwood, McCormick, and Saluda Counties, South Carolina and Elbert, Glascock, Greene, Hancock, Hart, Lincoln, Madison, Oglethorpe, Taliaferro, Warren and Wilkes Counties, Georgia. McCormick County, South Carolina is qualified under category 1 (substantial and persistent

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unemployment): Lincoln County, Georgia and Edgefield County, South Carolina are qualified under category 2 (low median family income): Elbert and Hart Counties, Georgia and Anderson and Greenwood Counties, South Carolina are qualified under category 6 (special impact area program); Glascock, Greene, Hancock, Madison, Oglethorpe, Warren, Wilkes, Abbeville, and Saluda Counties are qualified under category 8 (substantial unemployment); and Taliaferro County, Georgia is qualified under categories 2 and 8 (low median family income and substantial unemployment). Average annual benefits are as follows:

Breakdown of Average Annual Benefits

Item	Amount (1 Oct 85)
Power	$146,912,000
Recreation	3,597,000
Fish and Wildlife	71,000
Flood Control	171,000
Area Redevelopment	3,727,000
Total	$154,478,000

FISCAL YEAR 1987: The requested amount of $25,000,000 will be applied as follows:

Continue Real Estate Acquisition	$ 35,000
Continue Railroad Relocations	2,503,000
Continue Fish & Wildlife activities	112,000
Initiate Pumped Storage Powerhouse construction	500,000
Continue Pumped Storage Turbine Contract	5,000,000
Continue Pumped Storage Generators contract	4,920,000
Continue Pumped Storage Governors	600,000
Continue Pumped Storage Isolated Phase Bus	600,000
Continue Pumped Storage Control Boards	600,000
Continue Pumped Storage Transformers	750,000
Initiate other switchyard equipment	30,000
Continue Administrative, Operational and Access Roads	616,000
Continue Recreational Facilities	5,750,000
Continue Exhibit Displays, Powerhouse & Resource Mgmt. Center	50,000
Continue Permanent Operating Equipment	200,000
Continue Engineering and Design	1,434,000
Continue Supervision and Administration	1,300,000
TOTAL	$ 25,000,000

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NON-FEDERAL COSTS: The costs allocable to power are reimbursable, are preliminary, and will be reviewed and adjusted based on construction costs when the project becomes operational. The capital cost allocated to power is estimated at $502,597,000 including an adjustment in the estimated inflation allowance through the construction period, and allocated operation, maintenance, and replacement (OM&R) costs are estimated at $12,197,000. These values are based on January 1983 Federal Energy Regulatory Commission (FERC) values for pumping energy. The Southeastern Power Administration has furnished information that estimated revenues are sufficient to recover these capital costs, plus interest and annual costs of OM&R within the administratively determined repayment period of 50 years. In addition, local interests, the States of Georgia and South Carolina, are required to:

a. Pay, contribute in kind, or repair (repayment not to exceed 50 years) with interest, one-half of the separable costs allocated to recreation. The local interest cost is estimated to be $15,650,500 including an adjustment in the estimated inflation allowance through the construction period. South Carolina has exercised the 50-year repay option. Georgia has expressed the intent to do the same.

b. Bear all costs of operation, maintenance, and replacement of recreation facilities. The amount involved is currently estimated on an average annual basis at $1,295,000.

STATUS OF LOCAL COOPERATION: Agreements, in accordance with Public Law 89-72, with the States of Georgia and South Carolina have been executed and were approved by the Secretary of the Army 20 May 1974. Responsibility for repayment of power costs rests with the Southeastern Power Administration pursuant to Federal laws.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $541,000,000 is an increase of $6,000,000 over the latest estimate of $535,000,000 submitted to Congress (FY 1986). This change includes a decrease of $2,807,000 for adjustments in the estimated inflation allowance through the construction period; increase of $218,000 for design changes involving redesign of float and anchor system; increase of $8,589,000 for post-contract award and other estimating adjustments involving relocation of roads and utilities (+$424,500); acceleration of underwater work and replacement of floats (+$469,500); contract completion on Temporary Oxygen Storage Facility, Reservoir Clearing and Flotation Removal, Concrete Dam grouting, roads, breakwater and shoreline protection (-$543,300) contract overruns in powerhouse (+$2,627,200); modifications to powerhouse, SCADA equipment, SC Recreation facilities and earth embankment (+$2,043,400); claim settlement on powerhouse construction (+$3,642,000); reduction in contingency on the pump turbine contract and SC access roads (-$1,256,000); adjustments due to contract award on the Resource Management Center (+$127,700); fabrication and installation of exhibits (+$325,000), and additional E&D on Tainter Gate, concrete dam leaks, water quality sampling, railroad relocations, microseismic monitoring and recreation facilities (+$729,000).

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Richard B. Russell Dam & Lake, GA & SC

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STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: Final EIS on conventional installation submitted to CEQ 31 May 1974. A supplement on Water Quality of Final Environmental Impact Statement was filed with CEQ in May 1976. The final EIS on pumped storage was filed with EPA in October 1979. The Supplement on Fish and Wildlife Mitigation to Final Environmental Impact Statement was filed with EPA in December 1981.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404 Statement of Findings executed by the District Engineer on 14 April 1976.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1968. Funds to initiate land acquisition were appropriated in FY 1971 and were allocated in FY 1972. Initial construction funds were appropriated in FY 1975.

The Fish and Wildlife Mitigation Report and Supplement to the EIS was distributed for public review on 29 August 1980. The final report and EIS Supplement was approved by Board of Engineers for Rivers and Harbors in October 1981. The States of Georgia and South Carolina and other State and Federal agencies endorsed the report. The Chief of Engineers approved the report on 11 May 1982 and sent it with his recommendations to the Secretary of the Army. The Secretary of the Army submitted the report to Congress 15 September 1982 with the view that purchase of land of the magnitude proposed would be contrary to budgetary constraints and the desires of the Administration, and should be carefully considered by the Congress.

Section 182a of the Water Resources Development Act of 1976 amends the authorization for the Richard B. Russell project contained in Section 203 of the 1966 Act by deleting the phrase which precluded the inclusion of pumped storage power as a part of this project.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

DIVISION: South Atlantic
DISTRICT: Savannah

PROJECT: Richard B. Russell Dam & Lake, GA & SC

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	$178,000 (Jul 1973)		$535,000 1/ (Oct 1984)		$541,000 1/ 2/ (Oct 1985)
Reason for Change		($357,000) 1/		($6,000) 2/	
a. Price Escalation		158,395		-2,807	
b. Design Changes		60,772		218 3/	
c. Additional Function Added Under General Authorization		1,000			
d. Authorized Modification		102,505			
e. Post-contract Award and Other Estimating Adjustments		12,535		8,589 4/	
f. Schedule Changes					
g. Sundry		7,528			
h. Real Estate		14,365			

NOTE: 1/ Includes an allowance for estimated inflation through the construction period.

2/ Includes -$2,807.0 for adjustments in the estimated inflation allowance through the construction period.

3/ $218.0 increase due to suspension of work during redesign of float and anchor system and additional testing on the continuous oxygen system.

4/ $8,589.0 increase includes +424.5 due to claim settlements and contract completion on road relocations (+268.0), contract completions and changes to utilities, modifications to structures, additional pump supplied under agreement, additional review and negotiations (+156.5); +14[illegible]5 due to increased water depths during construction and acceleration of all underwater work under contract for Oxygenation Distribution & Diffusing System (+322.5), procurement of replacement floats under above contract (+147.0), completion of temporary Oxygen Storage

RICHARD B. RUSSELL DAM & LAKE, GA & SC

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE

Date Prepared: June 1985

DIVISION: South Atlantic
DISTRICT: Savannah

PROJECT: Richard B. Russell Dam & Lake, GA & SC

Facility site development (-71.5), completion of Reservoir Clearing Group I (-114.0), completion of Reservoir Topping and Flotation Removal (-138.5); +164.6 due to repair of numerous problem spots associated with soil piping, resulting from highly suspected dispersement properties of the subsurface soil on the Georgia side of earth embankment (+225.0), completion of Concrete Dam grouting downstream circumference of penstock (-60.4); +6,745.0 due to overruns in powerhouse contract estimated quantities (+2,627.2), modifications during construction (+1,247.8), improvement of SCADA equipment (+228.0), claim settlement on powerhouse construction (+3,642.0), reduction in estimated contract escalation on pump turbine contract (-1,000); -96.6 due to contract completion of administrative and operational road (-9.7), contract completion of Bobby Brown State Park Access Road (-86.9); +53.0 due to paving access road from South Carolina Rt 81 to existing Hesters Ferry boat ramp as requested by SCPRT (+225.0), additional gutter, riprap, ditch paving, and pavement marking as requested by SCPRT (+84.0), construction of water wells required for remaining design of water supply system (+93.0), decrease in GA and SC remaining recreational facilities by (-93.0) for required construction of wells; contract for SC access roads to boat ramps near completion, reduce excess, contingency (-256.0); +424.0 due to increase in overhead rates and profit on negotiated Resource Management Center (+60.7), an additional 5% allowed for contingency (+67.0), fabrication and installation of exhibits for Powerhouse and Resource Management Center (+325.0) purchase of two existing warehouses from powerhouse contractor for purpose of future storage requirements during pump storage construction (+33.6), work completed on breakwater and shoreline protection (-62.3); +729.0 due to additional effort on concrete dam leaks (+100.0), increased need for water quality sampling by WES (+155.0), additional in-house effort required for water quality monitoring (+50.0), (+65.4) due to additional effort required to modify tainter gate opening time, (+128.7) due to additional design requirements for revision of Seaboard Coast Line Railroad (R-3), (+71.3) due to continuance of microseismic monitoring for an additional two years following full pool, additional geotechncial effort required for remaining recreation facilities (+35.4), additional recreation facilities added to AE contract resulting from change in scope as requested by SCPRT (+72.9), additional geotechnical effort required for GA remaining recreation facilities (+27.2), revised topo and alignment of GA remaining recreation facilities (+5.6), and additional recreational facilities added to AE contract resulting from change in scope as requested by GA DNR (+17.5).

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: MULTIPLE PURPOSE POWER PROJECT

SUMMARY CONSTRUCTION PROGRAM (PB 1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	Land and Damages	28,127,000	28,031,900	60,000	35,000	
2	Relocations	72,468,000	65,317,900	2,647,100	2,503,000	2,000,000
3	Reservoirs	24,193,000	17,426,000	940,000		5,827,000
4	Dams	76,452,000	95,904,000	548,000		
5	Fish & Wildlife	445,000	4,800	87,200	112,000	241,000
6	Powerplant	229,200,000	154,582,900	8,496,100	13,000,000	53,121,000
7	Roads	3,959,000	1,286,600	1,261,400	616,000	795,000
8	Recreation	24,528,000	6,316,000	1,294,000	5,750,000	11,168,000
9	Cultural Resources	4,683,000	4,521,500	161,500		
10	Bldg., Grounds & Utilities	2,513,000	1,356,100	1,106,900	50,000	
11	Permanent Operating Equipment	997,000	669,900	127,100	200,000	
12	Engineering & Design	45,568,000	39,423,000	2,506,000	1,434,000	2,205,000
13	Supervision & Administration	27,867,000	21,819,800	1,494,200	1,300,000	3,253,000
14	Total Applied Cost (Fed. Funds Only)	541,000,000	416,660,400	20,729,600		
15	Undistributed Cost - None					
16	Total Project Cost (Fed. Funds Only)	541,000,000	416,660,400	20,729,600		
17	Total Cost (Fed. Funds Only)	541,000,000	416,660,400	20,729,600		
18	Undelivered Orders		787,900	-787,900		
19	Total Obligations		417,448,300	19,941,700		
20						
21						
22						
23	Method of Financing		417,490,000	19,900,000 1/		
24	Allocations			41,700		
25	Unobligated Carryover from Prior Year					
26	Total Funds for Obligation			19,941,700		
27	Appropriation Required				25,000,000	78,610,000
28						
29						
30	1/ Reflects $3,100,000 reduction					
31	assigned as Savings and Slippage					
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 Jan 86	SOUTH ATLANTIC DISTRICT SAVANNAH	SOUTH ATLANTIC - GULF BASIN SAVANNAH RIVER	RICHARD B. RUSSELL DAM AND LAKE GA & SC

ENG FORM 1 SEP 76 2206 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE.

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SOUTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation

a. Channels and Harbors

The program request of $108,782,000 provides for essential maintenance work on 52 channel and harbor projects named in the list which follows. The work to be accomplished under this activity consists of maintaining the navigation channels and harbors and anchorages of coastal harbors and waterways by means of dredging, snagging, bank revetment and operation and repair of navigation structures, all as authorized in the laws adopting river and harbor projects.

PROJECT	OBLIGATIONS ACTUAL FY 1985	ESTIMATED FY 1986	ESTIMATED FY 1987	EXPLANATION OF MAJOR CHANGES
ALABAMA				
Dauphin Island Bay	33,000	201,000	560,000	Variation in dredging requirements
Dog and Fowl Rivers	187,500	450,000	134,000	Variation in dredging requirements
Gulf Intracoastal Waterway (Mob Dist)	5,134,700	3,514,000	4,567,000	Variation in dredging requirements
Mobile Harbor	1,745,900	11,800,000	7,112,000	Variation in dredging requirements
Perdido Pass Channel	51,600	921,000	562,000	Periodic dredging
FLORIDA				
Apalachicola Bay	82,300	435,000	714,000	Variation in dredging requirements
Blackwater River	0	38,000	504,000	Periodic dredging
Canaveral Harbor	5,793,300	4,625,000	6,391,000	Variation in dredging requirements
Charlotte Harbor	2,006,800	345,000	3,145,000	Variation in dredging requirements
East Pass Channel	684,000	550,000	444,000	Variation in dredging requirements
Escambia-Conecuh Rivers	9,700	10,000	625,000	Periodic dredging
Fernandina Harbor	2,254,600	1,152,000	2,125,000	Variation in dredging requirements
Fort Pierce Harbor	57,500	135,000	1,055,000	Periodic dredging
Intracoastal Waterway, Jacksonville to Miami	913,100	2,085,000	3,778,000	Variation in dredging requirements
Intracoastal Waterway, Caloosahatchee-Anclote Rivers	117,400	120,000	2,182,000	Variation in dredging requirements

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SOUTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation (Cont.)

a. Channels and Harbors (Cont.)

PROJECT	OBLIGATIONS ACTUAL FY 1985	ESTIMATED FY 1986	ESTIMATED FY 1987	EXPLANATION OF MAJOR CHANGES
Jacksonville Harbor	7,362,700	3,510,000	3,772,000	Variation in dredging requirements
Palm Beach Harbor	3,705,600	2,400,000	1,760,000	Variation in dredging requirements
Panama City Harbor	431,400	900,000	1,105,000	Variation in dredging requirements
Pensacola Harbor	67,500	100,000	667,000	Variation in dredging requirements
Ponce de Leon Inlet	6,447,000	90,000	2,474,000	Periodic dredging
St. Lucie Inlet	2,079,000	50,000	1,115,000	Variation in dredging requirements
Tampa Harbor	165,400	600,000	3,425,000	Variation in dredging requirements
GEORGIA				
Atlantic Intracoastal Waterway (Savh Dist)	1,117,200	896,000	600,000	Variation in dredging requirements
Brunswick Harbor	1,832,000	6,573,000	4,253,000	Variation in dredging requirements
Savannah Harbor	10,102,200	8,063,000	7,574,000	Variation in dredging requirements
Savannah River below Augusta	805,200	309,000	367,000	Project in caretaker status, FY 86/87; rehab of public use facilities, FY 85
MISSISSIPPI				
Biloxi Harbor	161,300	2,275,000	1,352,000	Variation in dredging requirements
Gulfport Harbor	2,241,300	2,448,000	3,193,000	Variation in dredging requirements
Pascagoula Harbor	3,120,700	3,644,000	3,631,000	Variation in dredging requirements
Wolf and Jordan Rivers	0	0	500,000	Periodic dredging
NORTH CAROLINA				
Atlantic Intracoastal Waterway (Wilm Dist)	3,807,000	4,320,000	4,029,000	Variation in dredging requirements

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SOUTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation (Cont.)

a. Channels and Harbors (Cont.)

PROJECT	OBLIGATIONS ACTUAL FY 1985	ESTIMATED FY 1986	ESTIMATED FY 1987	EXPLANATION OF MAJOR CHANGES
Beaufort Harbor	76,400	340,000	355,000	Variation in dredging requirements
Bogue Inlet and Channel	316,000	244,000	250,000	Variation in dredging requirements
Carolina Beach Inlet	379,000	499,000	527,000	Variation in dredging requirements
Channel Back Sound to Lookout Bight	146,300	292,000	224,000	Variation in dredging requirements
Lockwoods Folly River	235,600	466,000	485,000	Variation in dredging requirements
Manteo (Shallowbag) Bay	5,145,900	5,289,000	5,688,000	Variation in dredging requirements
Masonboro Inlet and Channels	0	1,000,000	19,000	Bypassing sand to Wrightsville Beach, FY 86/87
Morehead City Harbor	1,793,000	6,889,000	4,260,000	Variation in dredging requirements
New River Inlet	219,000	329,000	337,000	Variation in dredging requirements
New Topsail Inlet and Channels	482,000	329,000	337,000	Variation in dredging requirements
Silver Lake Harbor	391,400	80,000	519,000	Variation in dredging requirements
Wilmington Harbor	3,869,000	3,748,000	4,815,000	Variation in dredging requirements
SOUTH CAROLINA				
Atlantic Intracoastal Waterway (Chas Dist)	3,237,000	3,500,000	3,372,000	Variation in dredging requirements
Charleston Harbor	5,282,900	4,795,000	5,745,000	Variation in dredging requirements
Cooper River, Charleston Harbor	2,472,300	3,548,000	4,125,000	Power plant fully operational, FY86
Folly River	257,400	236,000	320,000	Variation in dredging requirements
Georgetown Harbor	1,796,500	2,501,000	2,314,000	Variation in dredging requirements
Little River Inlet	117,100	23,000	228,000	Variation in dredging requirements
Murrells Inlet	84,400	27,000	725,000	Variation in dredging requirements
Shipyard River	695,600	632,000	482,000	Variation in dredging requirements
Town Creek	46,100	288,000	340,000	Variation in dredging requirements
Other Projects Maintained Periodically	4,332,400	615,000		
TOTAL - Channels and Harbors	96,922,200	98,269,000	108,782,000	

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SOUTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation (Cont.)

b. Locks and Dams and Canals

The program request of $39,632,000 provides for the operational requirements of eight canalized waterways. Requirements include: Operation and ordinary maintenance of project facilities; labor, supplies, materials and parts for day-to-day functioning; and periodic maintenance, repairs and replacements.

PROJECT	OBLIGATIONS ACTUAL FY 1985	OBLIGATIONS ESTIMATED FY 1986	OBLIGATIONS ESTIMATED FY 1987	EXPLANATION OF MAJOR CHANGES
ALABAMA				
Alabama-Coosa Rivers	4,611,600	6,171,000	4,924,000	Construction of training works, FY 85; variation in dredging requirements, FY 85 & FY 86
Black Warrior and Tombigbee Rivers	14,054,900	12,400,000	11,948,000	Variation in dredging requirements; construction of river training works, FY 85.
ALABAMA AND GEORGIA				
Apalachicola, Chattahoochee and Flint Rivers	5,962,500	3,500,000	4,522,000	Variation in dredging requirements
ALABAMA AND MISSISSIPPI				
Tennessee-Tombigbee Waterway	10,291,400	13,000,000	14,323,000	Increased operations, dredging and maintenance of structures as waterway opened to full navigation mid-FY 85; project fully operational in FY 86; increased water control and erosion control, FY 87.

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SOUTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation (Cont.)

b. Locks, Dams and Canals (Cont.)

PROJECT	OBLIGATIONS ACTUAL FY 1985	ESTIMATED FY 1986	ESTIMATED FY 1987	EXPLANATION OF MAJOR CHANGES
FLORIDA				
Apalachicola, Chattahoochee and Flint Rivers (See Alabama and Georgia)				
Cross Florida Barge Canal	1,595,900	1,313,000	1,439,000	Locks in caretaker status in FY 87
Okeechobee Waterway	2,063,200	1,708,000	1,960,000	Variation in lock maintenance requirements
Oklawaha River	7,500	40,000	40,000	Periodic snagging
NORTH CAROLINA				
Cape Fear River above Wilmington	517,700	451,000	476,000	
Total - Locks and Dams	39,104,700	38,583,000	39,632,000	
TOTAL - Navigation	136,026,900	136,852,000	148,414,000	

2. Flood Control

a. Reservoirs

The program request of $4,163,000 provides for operation and maintenance of four reservoirs and for scheduling flood control reservoir operations at privately owned dams on the Coosa River, AL.

MISSISSIPPI				
Okatibbee Lake	856,700	906,000	1,056,000	Increased water control management, FY 86/87

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SOUTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont.)

a. Reservoirs (Cont.)

PROJECT	OBLIGATIONS ACTUAL FY 1985	ESTIMATED FY 1986	ESTIMATED FY 1987	EXPLANATION OF MAJOR CHANGES
NORTH CAROLINA				
B. Everett Jordan Dam and Lake	820,400	785,000	771,000	Increased water control management FY 85
Falls Lake	918,000	877,000	1,046,000	Increased water control management FY 87
W. Kerr Scott Dam and Reservoir	1,102,300	1,114,000	1,212,000	
Scheduling Reservoir Operations, Coosa River, AL	26,900	79,000	78,000	Increased water control management FY 86/87
TOTAL - Reservoirs	3,724,300	3,761,000	4,163,000	

b. Channel Improvements, Inspections and Miscellaneous Maintenance

The program request of $6,124,000 provides for the maintenance requirements of two local flood protection projects and inspection of 78 completed projects during the budget year.

FLORIDA				
Central and Southern Florida	4,075,700	4,701,000	5,588,000	Repair and riprap eroded berms, Herbert Hoover Dike, FY 86/87
MISSISSIPPI				
East Fork, Tombigbee River	447,100	529,000	340,000	Increased snagging, clearing and excavation, FY 85/86

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SOUTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont.)

b. Channel Improvements, Inspections and Miscellaneous Maintenance

PROJECT	OBLIGATIONS ACTUAL FY 1985	ESTIMATED FY 1986	ESTIMATED FY 1987	EXPLANATION OF MAJOR CHANGES
Inspection of Completed Works	97,700	218,000	196,000	Increase in number of inspections, FY 86/87
Total - Channel Improvements, Inspections & Misc. Maintenance	4,620,500	5,448,000	6,124,000	
TOTAL - Flood Control	8,344,800	9,209,000	10,287,000	

3. Multiple Purpose Power Projects

The program request of $54,607,000 provides for the operation requirements of 13 multiple purpose projects. Requirements include: operation and ordinary maintenance of project facilities; labor, supplies, materials and parts for day-to-day functioning, and periodic maintenance, repairs and replacements.

ALABAMA				
Robert F. Henry Lock and Dam - R. E. "Bob" Woodruff Lake	1,743,200	1,196,000	3,220,000	Increased powerhouse and public use facility maintenance in FY 85 and 87
Millers Ferry Lock and Dam William "Bill" Dannelly Reservoir	2,496,200	3,257,000	3,496,000	Increased powerhouse maintenance in FY 86/87
Walter F. George Lock and Dam	5,776,700	5,000,000	5,252,000	Road repairs and increased powerhouse maintenance in FY 85
FLORIDA				
Jim Woodruff Lock and Dam - Lake Seminole	4,095,400	4,500,000	4,818,000	Increased dam and powerhouse maintenance in FY 86/87

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SOUTH ATLANTIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

3. Multiple Purpose Power Projects (Cont.)

PROJECT	OBLIGATIONS ACTUAL FY 1985	ESTIMATED FY 1986	ESTIMATED FY 1987	EXPLANATION OF MAJOR CHANGES
GEORGIA				
Allatoona Lake	5,088,500	4,800,000	4,561,000	Increased public use facility maintenance in FY 85
Buford Dam - Lake Sidney Lanier	6,890,500	6,000,000	5,959,000	Road resurfacing and powerhouse repairs in FY 85
Carters Lake	2,258,100	2,800,000	2,780,000	Increased powerhouse maintenance in FY 86/87
Clarks Hill Lake	7,471,900	5,629,000	5,680,000	Tainter gate and road maintenance in FY 85
Hartwell Lake	6,903,000	5,281,000	5,757,000	Increased powerhouse maintenance in FY 85
Richard B. Russell Dam and Lake	2,940,200	3,110,000	3,375,000	Increased water control management, FY 87
Walter F. George Lock and Dam (See Alabama)				
West Point Lake	3,874,500	3,570,000	3,598,000	Increased project road maintenance, FY 85
NORTH CAROLINA				
John H. Kerr Dam and Reservoir (See Virginia)				
SOUTH CAROLINA				
Clarks Hill Lake (See Georgia)				
Hartwell Lake (See Georgia)				
Richard B. Russell Dam and Lake (See Georgia)				

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APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

3. Multiple Purpose Power Projects (Cont.)

PROJECT	OBLIGATIONS ACTUAL FY 1985	ESTIMATED FY 1986	ESTIMATED FY 1987	EXPLANATION OF MAJOR CHANGES
VIRGINIA				
John H. Kerr Dam and Reservoir	4,049,700	5,009,000	4,691,000	Increased powerplant maintenance in FY 86/87. Repairs to right wing dike of dam in FY 86
Philpott Lake	1,368,500	1,367,000	1,420,000	
TOTAL - Multiple Purpose Power Projects	54,956,700	51,519,000	54,607,000	

4. Protection of Navigation

The program request of $12,897,000 provides for accomplishing the work essential to the administration and enforcement of specific laws enacted for the protection of navigation, particularly Section 10, River and Harbor Act, 1899; Sections 402 and 404 of FWPCA Amendment of 1972; Section 103 Marine Protection Research and Sanctuary Act of 1972 involving the issuance and review of permits for discharges into navigable waters; eradication of aquatic plant growth and project condition surveys.

General Regulatory Functions	8,619,900	8,883,000	9,085,000	
Removal of Aquatic Growth: Florida	2,457,700	2,474,000	2,738,000	
Project Condition Surveys	565,000	1,063,000	1,074,000	Increase in projects surveyed FY 86/87
TOTAL - Protection of Navigation	11,642,600	12,420,000	12,897,000	
GRAND TOTAL - SOUTH ATLANTIC DIVISION	210,971,000	211,000,000	226,205,000	

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OLIVER LOCK AND DAM LANDS

Mr. BEVILL. With regard to the Oliver lock and dam, your next move is to acquire the land for the site where the lock and dam will be located and built?

General EDGAR. Yes, sir, that is correct.

Mr. BEVILL. How long do you expect that to take?

General EDGAR. I will answer that question in two parts. The first has to do with the site associated with the Tuscaloosa Country Club and the remaining lands which are primarily on the other side of the river.

Appraisal of land required from the Country Club is complete and the proposal was sent to the Country Club back in December of 1985. After review of the proposal, the President of the Country Club requested a meeting with the District Real Estate representatives to discuss the proposal. That meeting was held yesterday. The Country Club has indicated that they would like to have their own appraisal made to determine whether or not the land value is different from the amount we offered them. They will have that done.

We advised the Country Club representatives at the meeting that we needed to have further discussions and a decision made as to the acquisition of that parcel of land by 1 August 1986. Failure to reach a negotiated agreement would require going to condemnation. That parcel of land, then, would be on the critical path for construction.

Insofar as the remaining lands are concerned, a landowners' workshop was conducted in Tuscaloosa in January 1986 to apprise the owners of those parcels of our land acquisition procedures. Appraisals of the land interests to be acquired are scheduled to be completed at the end of this month, with negotiations to commence in early March. Land acquisition at this point in time is scheduled to be completed by the end of September 1986.

Mr. BEVILL. Do you have any difficulty with filing condemnation proceedings?

General EDGAR. No, sir, I don't think so.

Mr. BEVILL. This is not the Corps, but one of the agencies of the Government now has been waiting for two years to proceed with condemnation. They have been negotiating for two years. That can be run into the ground. There is no reason not to go on and condemn this land and get the title, and worry about the damages later.

General EDGAR. Yes, sir.

Mr. BEVILL. The court handles that.

General EDGAR. That is correct, sir.

Mr. BEVILL. If they object to it—as a country lawyer I usually represented the land owner, but many times the State. It took about 90 days to acquire the title. Then they can negotiate after you get the title and go on and start building the lock and dam.

I hope you hold to that. You are committed to that schedule.

General EDGAR. We intend to do our best, sir.

Mr. BEVILL. When I ask you on August 15 what you are doing, I hope you have condemned it if they have not settled it, because so many of the agencies say you haven't done that, but some of these agencies drag these things out for years. That is a good way to kill

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a project. That, after all, is the only old, worn out lock and dam on Alabama's busiest waterway.

I would like to see it moved. We have taken enough time on it, in my judgment.

MOBILE HARBOR DEEPENING, ALABAMA

On the deepening of the Mobile Harbor, you have requested $15 million. What are your plans? It has been worked out with the State Docks that they are the local sponsor for participation to deepen the Mobile Harbor?

General EDGAR. Initially, the Alabama State Docks indicated they would like to pursue the phased project, as I indicated in our budget documents. This initial phase consisted of 11 miles of dredging to a transshipment facility we talked about a moment ago, and the construction of this facility would be a local responsibility. Also included in phase I were a 52-acre turning basin and anchorage area in the vicinity of McDuffie Terminal. Last week, at a meeting with the Mobile District, the State Docks indicated that the turning basin and the anchorage area would definitely be pursued. However, they wished to do some additional internal checking to determine if they wanted to pursue full implementation of phase I at this time.

Following Phase I, Phase II work would consist of widening the previously deepened channel to authorized project dimensions. The final phase of development would consist of dredging the area north of the transshipment facility as authorized. We have every reason to believe that we can conclude a local cost-sharing agreement with the Alabama State Docks by June, 1986.

Mr. BEVILL. Very good.

How many phases do you have?

General EDGAR. Right now there are three phases, as is scheduled at this point. What is at question is what is going to happen in the first phase; and, of course, if there is any change to the work scheduled in the first phase as shown in the budget document, that work which isn't constructed in Phase I would, of course, be moved to the second phase.

We are working very closely with the Alabama State Docks, and I am confident that we will proceed according to a phased construction schedule, as planned.

Mr. BEVILL. So, actually you cannot give a completion date on that at this time? It depends on what happens in Phase I?

General EDGAR. Yes, sir; that is correct.

INLAND WATERWAYS TRUST FUND

Mr. BEVILL. You have $10.5 million requested from the general appropriations and a like amount from the Inland Waterway Trust Fund for construction of the Oliver Lock and Dam. Is this all worked out? Do you anticipate any delays in starting the construction?

General EDGAR. We have experienced no funding delays at this time, Mr. Chairman, on any of our supplemental new starts. That would, of course, include Oliver. However, obligation of the requested funds for the Oliver Lock and Dam is contingent upon enact-

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ment of new legislation involving the Inland Waterways Trust Fund.

Mr. BEVILL. When are you scheduled to start construction?

General EDGAR. Sir, we are scheduled to start construction in June, 1986 with the award of a contract for constructing the right bank access road.

TENNESSEE-TOMBIGBEE WATERWAY, ALABAMA AND MISSISSIPPI

Mr. BEVILL. You mentioned the tonnage on the Tenn-Tom, approximately 2 million tons. That is less than the Corps estimated for the first year of operation. I keep reading this in the paper.

I would just like for you to state for the record what accounts for the lower than estimated tonnage.

General EDGAR. I think there are probably two things. One, we opened the waterway early, as you well know. We conducted a review in 1985 of the potential traffic that should move on the waterway during its early years of operation. During the part of that review involving actual contact with the companies who will potentially move commerce on the waterway, it was found that several companies did not know the waterway was open. Other companies or tow boat companies were either testing or planning to test the waterway before beginning its full scale use. Potential shippers who normally have long-term contracts with points along their existing routes are tied to those contracts. Also, port development along the waterway was caught short when the waterway opened early. It takes a while for those adjustments to be made.

The other thing has to do with coal shipments, and the nature of the coal economy is such that the amounts that were anticipated in our preconstruction evaluations have not taken place, simply because of economics.

During our review, the producers and mine operators stated that the value of the American dollar overseas had substantially reduced their coal exports. They believe that if and when this situation returns to normal, substantial volumes of coal will move on the Tenn-Tom Waterway. Also the recent lowered value of petroleum products has affected domestic sales of coal because plant conversions from oil to coal have been delayed.

I would also like to point out, we have been monitoring the traffic, the interesting thing that we have observed since the waterway has been open is each succeeding month we have had increased tonnage. The monthly increases show that tonnage is continually moving up. I think that is very encouraging, which indicates as the waterway has grown older and as people have come to know it, more and more is moving through the Tennessee-Tombigbee Waterway. That is certainly consistent with the concept that we had previous to construction.

Mr. BEVILL. Yes. That does not seem to ever make the news papers, of course, these are the same people that were opposed to the project to begin with.

I receive a monthly report. I noticed that tonnage increased every month. Actually, it has been scheduled to open in September of 1986 for several years now. It is not even scheduled to be open yet.

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General EDGAR. That is right, sir.

Mr. BEVILL. That part doesn't seem to come across somehow. That is why I asked you the question. I wanted to get that in the record.

Actually, I don't know of many new waterways in the country that ever opened and had the tonnage this one has and consistently increased every month.

General EDGAR. Yes, sir.

Mr. BEVILL. Even with Australia taking over so much of our coal business, our shipments to Japan, Australia has pretty well moved in and they have undercut us on the price. Actually, whenever that market recovers I think will depend on the Tenn-Tom inexpensive transportation competing with them.

General EDGAR. Yes, sir.

Mr. BEVILL. This is one reason I am anxious to see the Oliver Lock moved. That is a bottleneck. Last summer, it was closed for a month and put our coal miners out of business. That is the main artery in Alabama, as far as coal is concerned. That is the travel route right now on the Warrior-Tombigbee system. We are anxious to see that lock go at maximum speed.

As far as I know, there are no problems now.

Mr. BEVILL. The Chair recognizes Mr. Myers.

Mr. MYERS. Thank you, Mr. Chairman.

General, welcome back to the committee, with your new hat. You are certainly no stranger to this committee in this capacity. You are going to continue to do a good job there for the Chairman in his area, as you always have done.

Mr. BEVILL. He always has.

PASCAGOULA HARBOR, MISSISSIPPI

Mr. MYERS. I only have one question. Mr. Lott of Mississippi has a question about the Pascagoula Harbor and Bayou Cassotte. Do you have the capability to deepen that harbor to 42 feet?

General EDGAR. The current status of that one, Mr. Myers, is, the favorable survey report has been reviewed by the Board of Engineers for Rivers and Harbors. The plan of improvement includes deepening and widening the gulf entrance channel to 44 feet by 550 feet, deepening the main ship channel in Mississippi Sound to 42 feet, deepening and widening the Bayou Cassotte channel to 42 feet by 350 feet, and constructing a turning basin at the mouth of Bayou Cassotte. Our capability for the Pascagoula Harbor project is $900,000 to initiate the Continuation of Planning and Engineering requirements in preparation for construction. Although project and study capabilities reflect the readiness of work for accomplishment, they are in competition for available funds and manpower Army-wide. In this context, the Fiscal Year 1987 capability amounts consider each project or study by itself without reference to the rest of the program. However, it is emphasized that the total amount proposed for the Army's Civil Works Program in the President's Budget for Fiscal Year 1987 is the appropriate amount consistent with the Administration's assessment of national priorities for Federal investments and the objectives of avoiding large budget deficits and the serious adverse effect that Government borrowing is having on the

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national economy. Therefore, while we could utilize additional funds on individual projects and studies, offsetting reductions would be required in order to maintain our overall budgetary objectives.

Mr. MYERS. That is the limit of your capability? It is on track?

General EDGAR. Yes, sir.

Mr. MYERS. It is authorized?

General EDGAR. It is a study, sir. We are pursuing project authorization.

Mr. MYERS. Has a report gone on to the Assistant Secretary from the Chief; do you know?

General EDGAR. No, sir. It has not proceeded to that point.

Mr. MYERS. Thank you very much.

Thank you, Mr. Chairman.

Mr. BEVILL. General, each of us on the committee have several questions we are going to submit for the record, including questions for Chairman Whitten. Also the delegate from Puerto Rico has questions.

Questions Submitted by Congressman Bevill

GENERAL INVESTIGATIONS

PORT EVERGLADES, FLORIDA

Mr. BEVILL. In connection with the Port Everglades, Florida study, describe what steps you will take to assure that environmental aspects of the proposed deepening are fully considered.

General EDGAR. Sir, during the current year, we are preparing a reconnaissance report which will outline the data collection and environmental studies needed to evaluate the impacts of any proposed project deepening. During our feasibility studies, all necessary data will be collected and analyzed and the appropriate environmental documentation prepared relating to any project recommendation. We are fortunate in this particular area to have a great deal of available information from other programs, such as our regulatory efforts, which will assist in our studies. Preparation and coordination of the environmental documentation with all interested agencies will assure that the impacts of the proposed deepening are fully considered.

BRUNSWICK HARBOR, GEORGIA

Mr. BEVILL. You are looking at the feasibility of increasing the depths of the existing channels at Brunswick Harbor, Georgia. What type of cargo is presently handled in the Harbor and would increase depths affect the type of cargo moving through the port?

General EDGAR. The main cargos now handled at Brunswick Harbor are chemicals, salt, petroleum and forest products, and food and grains. The main cargos are not expected to change with the increased depth.

ST. MARYS RIVER BASIN, FLORIDA AND GEORGIA

Mr. BEVILL. On page 8 of the justification data, regarding the St. Marys River study, you indicate that the Navy's Kings Bay Submarine Support Base has increased the need for a comprehensive study of the Basin. Specifically, what impact does the Base have on the Basin?

General EDGAR. The major impact caused by the Navy's King Bay Submarine Base has been related population increase which is placing more pressure on the water related resources in the St. Marys River Basin. This growth along with normal anticipated growth increases the potential for greater development in flood prone areas.

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NORTHEAST GEORGIA REGION, GEORGIA

Mr. BEVILL. With regard to the Northeast Georgia study, why is it necessary to increase the number of water supply alternatives as shown on page 10 of the justification data?

General EDGAR. The number of water supply alternatives was increased due to the addition of Newton County to the study area which increased the area of the basin being considered. Also, the State of Georgia requested the Alcovy River Basin be addressed separately from the overall area. These increases required the increase in the number of water supply alternatives and locations resulting in additional hydraulic and hydrology investigations and economic analysis which increased the study cost.

SAVANNAH RIVER BASIN, GEORGIA

Mr. BEVILL. In connection with the Savannah River Basin study, you state that water resources needs within the Basin could be enhanced by developing a comprehensive water management plan. Would such a plan envision additional projects?

General EDGAR. The comprehensive water management plan is primarily a software type product. The plan would provide for better and more efficient use, management, and development of the four existing Federal projects on the Savannah River, Lakes Hartwell, Richard B. Russell and Clarks Hill, and the New Savannah Bluff Lock and Dam. The plan also would have the potential to identify additional projects in the study area to resolve the water related issues of the basin.

TURKEY CREEK, GEORGIA

Mr. BEVILL. In connection with the Turkey Creek, Georgia study, outline your plans for evaluating two sites identified in the National Hydropower Study.

General EDGAR. During the current year we are preparing a reconnaissance report which will address the Toomsboro and Dublin sites identified in the National Hydropower Study. We plan to evaluate both sites for their water supply potential, their benefits toward flood damage reduction downstream and their hydropower potential. An economic analysis including the cost estimate will be developed for each site. Results of this reconnaissance report, which is scheduled for completion in December 1986 will be pursued during the feasibility studies.

LITTLE PEE DEE AND PEE DEE RIVERS, NORTH CAROLINA AND SOUTH CAROLINA

Mr. BEVILL. Concerning the Little Pee Dee and Pee Dee Rivers, North Carolina and South Carolina study, you say that Fiscal Year 1986 funds will be used to refine the most promising reservoir sites in the Rocky River subbasin. What factors do you consider in making such an evaluation?

General EDGAR. The major factors being considered for the three reservoir sites under investigation are: the drainage area of each site and it's potential for flood damage reduction; the potential water supply yields of each site relative to water supply users; the engineering feasibility of each site relative to lands, geology, and utility and road relocations; and the social and economic impacts of each alternative on local area residents and the nation. Detailed engineering, economic and environmental studies are used to optimize the flood control, water supply and recreation benefits and to determine project feasibility.

RIO GRANDE DE LOIZA, PUERTO RICO

Mr. BEVILL. You have completed an evaluation of potential water storage sites as part of the Rio Grande de Loiza River and tributaries, Puerto Rico study. Have you identified adequate storage sites?

General EDGAR. Sir, we have identified four storage sites that appear adequate. We have analyzed an existing site, the Loiza Dam, and three proposed sites near Juncos, San Lorenzo, and on the upstream part of the Rio Grande de Loiza River. Each of these areas has adequate flow and potential storage to meet the water supply needs of the area. We are currently proceeding with geotechnical and economic investigations to ascertain the feasibility of each reservoir.

HUDSON RIVER, FLORIDA

Mr. BEVILL. Describe the Hudson River, Florida study which is being initiated in the current fiscal year.

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General EDGAR. Sir, the Hudson River is a Federally authorized but unconstructed project in Pasco County, Florida. We began our investigations of the Hudson River under the Section 107 small navigation project authority. Recent significant growth in both commercial and recreation fleets requires project re-evaluation. The study will evaluate the feasibility of providing a channel from the Hudson River to deeper water in the Gulf of Mexico. This improvement will benefit both commercial and recreational boating interests.

WILMINGTON HARBOR-NORTHEAST CAPE FEAR RIVER, NORTH CAROLINA

Mr. BEVILL. Describe the Wilmington Harbor-Northeast Cape Fear River, North Carolina study for which you are requesting $250,000 to begin continuation of planning and engineering in Fiscal Year 1987.

General EDGAR. Wilmington Harbor is located at Wilmington on the southern coast of North Carolina in New Hanover and Brunswick Counties. The plan of improvement provides for modifying the channels and a turning basin to provide safer navigation for existing traffic and to better accommodate projected growth. The planning and engineering effort will provide the general design for proposed project modifications and the disposal of dredged material.

CONSTRUCTION--NEW STARTS

Mr. BEVILL. Your Division has four of the new construction starts requested in the Fiscal Year 1987 Budget: Jacksonville Harbor, Florida, Mill Cove; Ponce Harbor, Puerto Rico; Threemile Creek, Mobile, Alabama; and Sowashee Creek, Meridian, Mississippi. Describe each project and indicate why they were selected as new starts.

General EDGAR. Yes, Sir. I will be glad to provide that information. On all proposed new starts, local sponsors have indicated a willingness to provide the items of local cooperation.

JACKSONVILLE HARBOR, FLORIDA, MILL COVE

Mill Cove is a shallow body of water on the St. Johns River about ten miles from the Atlantic coast and adjacent to the Jacksonville Harbor Federal project channel. The project provides for enlarging a weir structure on the north side of the cove and the opening at the west end of the cove to reduce shoaling and improve circulation in Mill Cove. This project was selected as a new start because it mitigates damages attributable to the existing Jacksonville Harbor project.

PONCE HARBOR, PUERTO RICO

Ponce Harbor is located about midway on the south coast of Puerto Rico, about 48 overland miles southwest of San Juan. The project provides for a channel 600 feet wide by 36 feet deep from the Caribbean Sea approximately 2.8 miles to the port, thence a channel 400 feet wide by 36 feet deep into a 950-foot diameter turning and maneuvering basin 36 feet deep. The improvement will result in transportation savings by the use of larger vessels. The project is needed at this time to allow deeper draft vessels to use the harbor and support new and proposed terminal development and traffic. Selection of the project was based on high priority navigation benefits.

THREEMILE CREEK, MOBILE, ALABAMA

Threemile Creek, located in the western part of Mobile, Alabama, flows easterly about 14 miles to enter the Mobile River near the Alabama State Docks and drains 39-square miles of metropolitan Mobile. The urbanized area is subject to flooding from heavy rainfalls. The plan of improvement provides for enlargement of the stream channel for about 5.6 miles to protect against flooding that would occur once in 50 years. The project was selected based on the high priority output for urban flood control benefits.

SOWASHEE CREEK, MERIDIAN, MISSISSIPPI

Sowashee Creek drains about 83-square miles in the Upper Pascagoula River Basin in eastern Mississippi. The plan of improvement provides for flood protection along the lower 10-mile segment by channel enlargement, clearing and snagging, and necessary relocation and modification of bridges and utilities. The project will reduce flooding in the City of Meridian, Mississippi. This project was selected based on the high priority output for urban flood control benefits.

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Mr. BEVILL. Three of the new construction start projects have not been authorized. What is the basis for including them in the budget?

General EDGAR. Sir, the criteria used in budgeting for new construction starts is that the authorizing document for any project must have been reviewed by the Chief of Engineers and referred to the Assistant Secretary of the Army's Office for review. In the case of the Sowashee Creek project, the Office of Management and Budget review was completed on December 26, 1985, and the project is included in both H.R. 6 and S. 1567 for authorization. Similarly, the Jacksonville Harbor, Mill Cove and Threemile Creek, Mobile, Alabama projects have been reviewed by the Assistant Secretary of the Army for Civil Works and are included in proposed authorization legislation.

MOBILE HARBOR (DEEPENING), ALABAMA

Mr. BEVILL. $15 million is budgeted for the Mobile Harbor Deepening, Alabama project. On page 46 of the justifications you show a scheduled balanced to complete after Fiscal Year 1987 of $32,944,000 and an unscheduled balanced to complete after Fiscal Year 1987 of $180,730,000. Would you explain?

General EDGAR. Sir, in cooperation with the local sponsor, the project is proposed to be constructed in phases with only a portion of the work scheduled at this time. The scheduled balance to complete is the remaining funds required to provide a channel 55 feet deep at the existing widths from the Gulf of Mexico to the proposed transshipment facility near the mouth of Mobile Bay and a turning basin opposite McDuffie Terminal. The unscheduled balance to complete is the estimated project cost for the remaining authorized modifications. These remaining modifications include widening the entrance channel from 600 to 700 feet, widening the bay channel to the transshipment facility from 400 feet to 550 feet, deepening the bay channel north of the transshipment facility from a 40-by 400-foot channel to a 55-by 550-foot channel, constructing an anchorage area opposite the McDuffie Terminal, and constructing an island with dredged material just offshore of the Brookley Complex.

INLAND WATERWAYS TRUST FUND

Mr. BEVILL. As shown on page 53 of the justifications, the Fiscal Year 1987 budget contains a request of $10.5 million from general appropriations and a like amount from the Inland Waterways Trust Fund for construction of the William Bacon Oliver Lock and Dam in Alabama.

The justifications state that "obligations and expenditures of the budgeted funds . . . are contingent upon enactment of legislation increasing the amount of revenue derived from taxes imposed on fuels. . . ."

This project, as well as other needed projects, has been authorized and funded for planning, land acquisition and construction in the Fiscal Year 1985 Supplemental Appropriations Bill. What is the justification for not allowing these projects to move forward assuming the conditions contained in the Supplemental have been met?

General EDGAR. Sir, it is my understanding that obligation of funds for the construction of inland waterway navigation new starts contained in the Fiscal Year 1985 Supplemental Appropriations Act is contingent on new legislation consistent with the Administration and Senate Majority Leadership Agreement which provides for an increase in the inland waterways fuel tax.

GULFPORT HARBOR, MISSISSIPPI

Mr. BEVILL. Obligation and expenditure of funds requested for the Gulfport Harbor, Mississippi project are also contingent upon legislation being enacted. The budgeted funds are for engineering and design only. Why not allow the design to proceed in order that construction can move forward in a timely manner?

General EDGAR. The survey report used as a basis for Gulfport Harbor authorization was finalized in 1978. Since that time, conditions in the area have changed. Prior to initiating detailed design, project economics must be reevaluated and an acceptable plan for dredged material disposal must be developed. The funds allocated in Fiscal Year 1986 and requested for Fiscal Year 1987 will be utilized primarily for this work. If these studies are favorable, design can then proceed in a timely manner.

PALM BEACH COUNTY, FLORIDA

Mr. BEVILL. Would you explain the increase in the Federal share of the Delray Beach to Boca Raton Inlet reach of the Palm Beach County, Florida project?

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General EDGAR. Sir, the Palm Beach County project was authorized by the River and Harbor Act of 1962. At that time, this particular stretch of beach was privately held. Since that time, land ownership has changed from private to public with adequate public access which qualified the area for a higher Federal participation cost.

CENTRAL AND SOUTHERN FLORIDA

Mr. BEVILL. What caused the decrease of $62 million in the cost of the Central and Southern Florida project?

General EDGAR. Sir, the major reason for that decrease can be attributed to updating the flood control plan for the Upper St. Johns River portion of the project. The plan involves changes to the levees, structures, and canals which is more environmentally acceptable to the State of Florida and provides a higher degree of flood protection. Other changes involved in the decrease include adjustments to the estimated inflation allowance through the construction period, additional dewatering requirements for installation of baffle blocks at five structures, modifications to the length and protective material for the Herbert Hoover Dike Levee and Revetment work, addition of two hurricane gate replacement structures, and adjustments based on completed contracts.

GLENCOE, ALABAMA

Mr. BEVILL. Public Law 99-88, the Fiscal Year 1985 Supplemental Appropriations Act, directed that certain channel work be undertaken at Glencoe, Alabama. What has been done in response to the language of the Supplement Act?

General EDGAR. Sir, work at Glencoe, Alabama has not yet been started. However, work planned for Fiscal Year 1986 includes the initiation of engineering and environmental efforts associated with the determination of alternative solutions to the steambank sloughing and erosion caused by extensive shoaling. Completion of these efforts, and preparation of a supplement to the Detailed Project Report and an Environmental Assessment is scheduled for Fiscal Year 1987.

JACKSONVILLE HARBOR, FLORIDA

Mr. BEVILL. The Fiscal Year 1986 Conference Report also provided for the removal of obstructions at Blount Island in Jacksonville Harbor. What is the status of the work?

General EDGAR. Sir, the design of this project is essential complete. The contract for maintenance dredging which includes removal of the obstruction is scheduled for award in May 1986.

OPERATION AND MAINTENANCE—CROSS FLORIDA BARGE CANAL FLORIDA

Mr. BEVILL. I note on page 186 of the justification date that the budget request for the Cross-Florida Barge Canal is $1,439,000 with the notation "Locks in caretaker status in FY 1987". What additional funds will be required in FY 1987 to maintain the project in an operational status as is being done in the current fiscal year?

General EDGAR. Sir, an additional $329,000 will be required to keep the locks operational during Fiscal Year 1987.

REMOVAL OF AQUATIC GROWTH

Mr. BEVILL. The budget contains $2,738,000 for the removal of aquatic growth in Florida. What is the total FY 1987 capability for this work?

General EDGAR. Sir, the $2,738,000 is all the Jacksonville District, in cooperation with the State of Florida, can effectively use in Fiscal Year 1987 for aquatic plant growth control.

JACKSON, ALABAMA

Mr. BEVILL. The House Report accompanying the FY 1986 Energy and Water Development Appropriation Bill directed the Corps to look at alternatives to the realignment of the existing channel in the vicinity of Jackson, Alabama. What is the status of the alternatives study?

General EDGAR. We are investigating three alternate alignments for the navigation channel at Jackson. We have completed our engineering design and cost estimates for each alternative. An economic analysis of possible port benefits was initiated in October 1985. Field work to define cultural and biological resources of the area are

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nearing completion. The economic and environmental studies are required to determine the best plan. We expect to complete the report by May 1986.

Questions Submitted by Congressman Whitten

Tombigbee River and Tributaries, Mississippi and Alabama Study

Question. I note you are requesting $990,000 in Fiscal Year 1987 for the Tombigbee River and Tributaries study. What is the status of the study and how will the requested funds be used?

Answer. The study was resumed in December 1985. An extensive public involvement and agency coordination program has been initiated to determine the water resources needs of the basin as indentified by local interests. In January 1986, we had a meeting with the Soil Conservation Service, U.S. Forest Service and State agencies from Alabama and Mississippi to define the scope of the public involvement program. Public meetings and workshops will be conducted this spring jointly with the Soil Conservation Service and other agencies. The funds requested for Fiscal Year 1987 will be used to identify the extent and magnitude of erosion and sedimentation problems along the Tombigbee River and its tributary streams. Development of alternative solutions including the engineering, economic and environmental evaluations will be initiated.

Question. Why has he cost of the study increased by $600,000?

Answer. The study cost increased due to the requirement to conduct water supply studies to address local interests concerns with declining ground water levels in the upper Tombigbee River Basin. Also, since the study is being conducted jointly with the Soil Conservation Service coordination meetings with that agency and the many other local entities are scheduled at more frequent intervals resulting in additional costs.

Twenty Mile Creek

Question. $4.9 million is requested for the Tombigbee River and Tributaries project. The funds are for the continuation of work on Twenty Mile Creek. What is the status of the work on Twenty Mile Creek and what specific work is planned in Fiscal Year 1987?

Answer. The work on Twenty Mile Creek from mile 11.7 to mile 22 is about 30 percent complete. Work completed includes grade control structures at mile 11.7, mile 19.9, Okeelala Creek, Town Creek and Robinson Creek. Also bank protection has been provided at Mississippi Highway 362, U.S. Highway 45 and County bridges at miles 13 and 19. Two contracts have been awarded which provide bank stabilization measures along two miles of the stream. These contracts are scheduled for completion in Fiscal Year 1987. A contract for additional bank stabilization measures is scheduled for award in May 1986 with completion in Fiscal Year 1987. A contract for erosion control and bank protection measures at the most severly eroded areas is planned for award in October 1986.

Sowashee Creek, Meridian, Mississippi

Question. One of the new construction starts recommended in the budget is the Sowashee Creek, Meridian, Mississippi project. Describe this project and outline the work planned in Fiscal Year 1987.

Answer. The plan of improvement consists of channel enlargement and clearing and snagging from the mouth to mile 10.5. The clearing and snagging portion of the project extends from the mouth to mile 2.6, mile 3.6 to 6.6 and mile 9.5 to 10.5. Channel enlargement will be accomplished from mile 2.6 to 3.6 and from mile 6.6 to 9.5. Bridges and utilities affected by the planned improvements will require adjustment or relocation. Work planned for Fiscal Year 1987 includes initiating modification of the railroad bridge affected by the proposed channel improvements, and construction of channel improvements in the downstream reach of the project to Gallagher's Creek, a tributary of Sowashee Creek. This work consists of channel widening, clearing and snagging, construction to two grade control structures and bank protection at three highway bridges, two railroad bridges and the water treatment plant.

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ACTIVITIES IN MISSISSIPPI

Question. In addition to the projects we have already discussed, there are many other worthwhile projects in my State of Mississippi. Please supply the status of each of these projects for the record.

Answer. [The information follows:]

GENERAL INVESTIGATIONS—MISSISSIPPI GULF COASTAL AREAS, MISSISSIPPI

The primary study area includes Hancock, Harrison and Jackson Counties, Mississippi. The study area includes the Mississippi Coastal Stream basin and portions of the Pearl and Pascagoula River basins.

The study was initiated in Fiscal year 1984. A meeting was held with other Federal, State and local agencies to discuss the study scope and content. Public meetings were held to permit the public to identify the pressing water resources problems and needs that should be addressed by the study.

Needs were identified for beach erosion control in Hancock County and navigation improvements in Jackson County. Local interests desire a master plan for water supply, but development of a single-purpose plan was not considered to be a Federal interest. Reconnaissance phase studies demonstrated that feasible projects could be developed for beach erosion control and navigation. A report recommending feasibility-phase studies for these purposes was approved in December 1985, and funds were allocated for Fiscal Year 1986. The Mobile District is finalizing arrangements for study cost-sharing with the local sponsor.

MISSISSIPPI SOUND AND ADJACENT AREAS, MISSISSIPPI AND ALABAMA

Mississippi Sound is located in southeastern Mississippi and southwestern Alabama, separated from the Gulf of Mexico by five barrier islands. Adjacent areas include Mobile Bay in Alabama, Lake Borgne in Louisiana, and several smaller bays along the Mississippi and Alabama Coast. Local interests desired that the present dredging and dredged material disposal practices for both new work and maintenance in Mississippi Sound be examined to determine how these practices should be modified, considering possible development of a regional dredging program, new dredging equipment, and the environmental quality of the area. A reconnaissance report was prepared and coordinated with all concered interests and Federal, State and local agencies.

This study addressed alternatives for disposal of existing maintenance and new work material that would result from proposed improvements to the existing projects in the Mississippi Sound. The engineering and economics of various dredging equipment and dredged material transport methods were evaluated. Collection of physical, chemical, and biological data was performed to determine existing conditions in the Mississippi Sound. Considerable information on nursery, spawning and migratory activities of 41 species of finfish and shellfish which are ecologically and/or economically important in the area was collected. The data collected have been stored in computerized data bases. In addition, an index of all the data collected has been devised which will provide information on the type of data stored, format and how to obtain and access the various groups of data on hand. A math model which can reproduce the hydraulic and saline characteristics of the sound and generally reflect the effects of channel modifications and different dredge material disposal practices has been completed. Prototype runs of the model have been made for Biloxi and Gulfport Harbors, Mississippi. The study was completed in September 1984. The study concluded that no additional Congressional action is needed to implement the recommendations of the study. The principal study findings and products provide data for the management and location of dredged material disposal areas and techniques. The report with recommendations was processed to the Committee on Environment and Public Works on October 4, 1985.

NAVIGATION TO PORT BIENVILLE INDUSTRIAL PARK, MISSISSIPPI

Port Bienville Industrial Park is located in Mulatto Bayou, adjacent to East Pearl River near its mouth, and very near the Louisiana/Mississippi state line, about 25 miles east northeast of New Orleans, Louisiana. The study will determine the need and feasibility for providing a Federal navigation channel between the Gulf Intracoastal Waterway and the public terminals in Port Bienville Industrial Park, Mississippi. The study was completed as an interim report under the Pearl River Basin authority in September 1984. The report recommended construction of a channel 12 feet deep and 115 feet wide through Little Lake, Louisiana, connecting the Port Bienville, Mississippi Industrial Park and the Gulf Intracoastal Waterway. Dredged

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material from the channel in Little Lake wold be used to create marsh in areas where erosion is occurring. Dredged material from the remainder of the channel would be placed in a diked upland disposal site in the Industrial Park. Review by the Board of Engineers for Rivers and Harbors indicated that the Enviornmental Assessment included in the report did not adequately address the environmental impacts of the proposed marsh creation. According, the report has been returned to the District for preparation of an Environmental Impact Statement. The revised report and new Environmental Impact Statement are scheduled for submittal in July 1986.

PASCAGOULA HARBOR, MISSISSIPPI

Pascagoula Harbor is located on Mississippi Sound, about 100 miles east of New Orleans, Louisiana, and 45 miles west of Mobile, Alabama. Local interests desire greater channel dimensions in the main ship channel, Bayou Casotte channel and the turning basin. The report recommended deepening the existing Federal project from 38 to 42 feet at a width of 350 feet in all channel segments except in the entrance channel. The entrance channel would be 44 by 550 feet. The total cost of the proposed project is $57.3 million and the benefit-cost ratio is 3.1 to 1. The report has been reviewed and approved by the Board of Engineers for Rivers and Harbors and is now being processed by the Office of the Chief of Engineers.

PASCAGOULA RIVER BASIN, MISSISSIPPI AND ALABAMA

The Pascagoula River Basin lies in southeastern Mississippi and a small part of southwestern Alabama. The Pascagoula River system drains an area of 9,700 square miles, of which the main headwater streams, the Leaf and Chickasawhay Rivers, drain 3,580 and 2,970 square miles, respectively. Investigations into the water resource needs and opportunities in the Pascagoula River Basin have focused on four principle areas: additional water supply in Jackson County, flooding in the Hattiesburg and Petal areas, a review of the project purposes and operations of the Okatibbee Lake project near Meridian for possible conversion of water supply storage to other purposes, and flood control in the Laurel area.

The study of water supply for Jackson County was completed and made available to local officials in May 1981. The report did not contain any recommendations for Federal development as the study was conducted to provide technical assistance in examining the different options available for meeting future water supply requirements.

The flood control studies in the Hattiesburg/Petal area were completed under the small project authority in 1983. The recommended plan for flood damage reduction involves clearing and snagging of 2.27 miles of the Leaf and Bowie River channel, floodplain clearing of 214 acres along the banks of the rivers, relocation of the Petal sewage lagoon, and installation of two river gages in the Bowie River and one rainfall gage in the basin. Design of this project is complete. A construction contract is scheduled to be awarded in March 1986.

The Bowie Creek Lake project was reviewed in conjunction with the flood control studies in the Hattiesburg and Petal area. The project as authorized for Phase I studies does not meet the flood control needs of the area. The review of the Okatibbee Lake project is essentially complete. Structural changes to existing project features are not likely to be recommended.

Flood control alternatives for the Laurel, Mississippi, area are currently being investigated. Investigations of base conditions in the area have been completed and a clearing and snagging plan is being considered for recommendation by the District. The overall study is approximately 85 percent complete and is scheduled for completion in 1986.

PEARL RIVER AT JACKSON, MISSISSIPPI—INTERIM SURVEY REPORT FOR FLOOD CONTROL AT JACKSON, MISSISSIPPI AND VICINITY

This interim report and Environmental Impact Statement on the flooding problems in the upper Pearl River Basin were completed in October 1984. The Division Engineer's notice was issued in November 1984. The Board of Engineers for Rivers and Harbors has completed its review and the report together with the proposed report of the Chief of Engineers are under review by the State and agencies.

The report recommends that a dry dam be installed on the Pearl River at a site 40 miles upstream of Jackson. The project would be an earthfill dam about 45 feet high and 2.8 miles long controlling a drainage area of 2,700 square miles, or about 87 percent of the drainage area of the Pearl River at Jackson. The dam would regu-

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late floods up to the magnitude of the April 1979 record flood discharging flows through an ungated service spillway. About 38,000 acres would be acquired for the dry reservoir. Most of this would be acquired by easement, allowing present use of the area to continue with easement restrictions.

The estimated first cost for the project would be $80.1 million, and operation, maintenance, and major replacement costs would be $71,000 annually. Costs would be shared between Federal and non-Federal interests in accordance with policies and procedures prescribed by the Administration and the Congress. The project would provide average annual benefits of $9,312,000 at an average annual cost of $7,243,000.

SOWASHEE CREEK, MERIDIAN, MISSISSIPPI

Flooding from Sowashee Creek causes significant damage to residential, commercial, and industrial establishments in the urban area of Meridian, Mississippi. Furthermore, the water quality of the stream has been seriously affected by industrial waste and runoff from the urban area. The project authorized for Phase I study is a portion of the total works included in the authorized Soil Conservation Service Watershed Work Plan for Sowashee Creek. The Phase I General Design Memorandum was released by the District Engineer in February 1984, approved by the Division Engineer in March 1984 and approved by the Board of Engineers for Rivers and Harbors in June 1984. The plan involves clearing and snagging and channel enlargement through the urban limits for a total lenght of 10.1 miles above the mouth of the creek. The Phase I General Design Memorandum has been reviewed by the state and local agencies, and the final Chief's report was signed 25 February 1985. The Phase II General Design Memorandum is scheduled for completion in February 1986.

TENNESSEE-TOMBIGBEE CORRIDOR STUDY

The Tennessee-Tombigbee Corridor Study combines three Congressional authorizations which direct the Corps of Engineers to provide a plan for development, conservation, and utilization of water and related land resources, given consideration also to environmental quality, and human and economic resources. There are 51 counties in the Corridor Study area which extends from the confluence of the Tennessee and Ohio Rivers near Paducah, Kentucky, to the Gulf of Mexico near the Port of Mobile.

Study goals are: (1) Plan for development, utilization, and conservation of water and related land resources; (2) contribute to an economic development plan for the area; (3) contribute to the development of human resources; and (4) contribute to the maintenance or enhancement of environmental quality.

The Corridor products consistes of a pair of computer systems and a large collection of descriptive reports covering the social, economic, and environmental conditions of the 51 counties and four States of the Tennessee-Tombigbee Corridor. Many of the reports have already been furnished to local interests and planners for their use. The two computer systems and the reports comprise one of the largest volumes of information ever assembled for this region and form the basis of the informational product of the study. The computer systems were developed so that the information provided would be easily accessible to users and responsive to updating requirements.

One of the systems, the Economic Impact Assessment Model, computes and analyzes socio-economic information and predicts the likely results of certain development actions or types of activity. The Integrated Data Analysis System can combine geographic and environmental data, transportation systems, county maps, and other data displayed in graphic format and can provide information such as areas best suited for industrial development or those which are environmentally sensitive.

Sessions were held in 1985 to train local officials and planners to utilize these products and systems. Access by public users to all of the products of the Corridor Study has been provided. The study is complete, and the products are being maintained and updated in order to keep them timely and useful. The Corps will, in the near future, transfer the primary responsibility of maintenance and upkeep to non-Federal entities.

TOMBIGBEE RIVER BASIN STUDY, MISSISSIPPI AND ALABAMA

A joint study by the Department of Army and the Department of Agriculture in the interest of flood prevention and control, soil erosion and siltation control, water quality control, water supply, recreation, fish and wildlife, environmental quality,

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watershed protection, and allied purposes authorized by a resolution adopted on 19 September 1984 by the House Committee on Public Works and Transportation was combined with the outstanding basin study authorized in 1939. As authorized, the joint study includes the Tombigbee River Basin in Mississippi and Alabama and the Tuscumbia River Basin in Mississippi. The Mobile District has been assigned responsibility for the Tombigbee River Basin and the Tuscumbia River is in the Lower Mississippi Valley Division. The Tombigbee River Basin portion of the joint study was initiated in December 1985 and is scheduled for completion in March 1990.

WOLF AND JORDAN RIVERS, MISSISSIPPI

The Wolf and Jordan Rivers are coastal streams which enter St. Louis Bay from the east and west sides, respectively. St. Louis Bay is located at Pass Christian, Mississippi, about 54 miles east of New Orleans, Louisiana, and 100 miles west of Mobile, Alabama. The existing Federal project for Wolf and Jordan Rivers provides for a 7-foot by 100-foot channel from the 6-foot depth contour in St. Louis Bay to the 7-foot contour in each stream. Channel lengths are 1.6 miles in the Wolf River and 2.0 miles in the Jordan River. Construction on the project was commenced in 1907 and completed in 1908. The Bayou Portage Channel is a locally provided 8 feet by 100 feet wide by about 4.5 miles long entrance channel, extending from the 6-foot depth contour in St. Louis Bay along the alignment of the Wolf River channel, branching into Bayou Portage.

The purpose of the navigation study is to determine whether the Federal project for Wolf and Jordan Rivers should be modified or maintained in any way, with particular reference to providing modification and maintenance of the locally constructed channel. The study was completed in September 1985, and is currently under review by the Board of Engineers for Rivers and Harbors.

GULFPORT HARBOR, MISSISSIPPI

Gulfport Harbor is located in Harrison County, Mississippi, on Mississippi Sound about equidistant (80 miles) from New Orleans, Louisiana, and Mobile, Alabama. The existing Federal channel at Gulfport is 32 feet wide and about 8 miles long across Ship Island Bar, 30 feet deep by 220 feet wide and about 11 miles long through Mississippi Sound to an anchorage basin at Gulfport that is 30 feet deep, 1,320 feet wide and 2,640 feet long. The project also includes a 26-acre commercial small boat harbor with an entrance channel 8 feet deep by 100 feet wide and 4,300 feet long.

Feasibility studies found that further improvement of existing navigation facilities is necessary to accommodate present and projected deep-draft shipments. Those studies recommended a plan of improvement which provides for modifying the existing ship channel to 38 feet deep and 400 feet wide across Ship Island Bar and to 36 feet deep by 300 feet wide in Mississippi Sound with changes in channel alignment and in the entrance to the anchorage basin to provide for safe and unrestricted navigation. Two options for disposal of dredged material remain to be evaluated. One option provides for spreading new work material in a thin layer in open water of Mississippi Sound (thin layer disposal). The second option provides for conveying the material to the Gulf of Mexico (Gulf disposal). The Corps report was submitted to Congress on 28 November 1978. The improvement of Gulfport Harbor was authorized in the Fiscal Year 1985 Supplemental Appropriations Act (P.L. 99-88). The initial allocation of funds is being used to develop updated costs and benefits and coordinate cost-sharing requirements with the local sponsor.

The Fiscal Year 1986 funds are being utilized to initiate Engineering and Design efforts to include initiating the re-evaluation of project costs and benefits and environmental studies. The FY 1987 funds will be used to continue engineering, environmental and economic studies. The General Design Memorandum and Environmental Impact Statement are scheduled for completion in July 1988.

CONSTRUCTION—TOMBIGBEE RIVER AND TRIBUTARIES, ALABAMA AND MISSISSIPPI

Channel improvements for 2.1 miles of Luxapalila Creek, the lower 11.7 miles of Twenty Mile Creek, Big Browns, Donivan, Mantachee, James, and Stanefer Creeks are complete. Also, construction of transition sections for Twenty Mile and Donivan Creeks have been completed. Work underway consists of construction of additional erosion control measures along Twenty Mile Creek between miles 11.7 and 22.0. The Draft Supplement to the General Design Memorandum (SGDM) and Draft Supplemental Environmental Impact Statement (SEIS) for Luxapalila Creek are complete.

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The final SGDM and SEIS will be complete in June 1986. The SEIS is scheduled to be filed with the EPA in July 1986.

EAST HARRISON COUNTY CANAL, BILOXI, MISSISSIPPI

Biloxi is located on Mississippi Sound in southeastern Mississippi, approximately 95 miles east of New Orleans, Louisiana and 65 miles west of Mobile, Alabama. The East Harrison County Canal is located in the Back Bay of Biloxi about 0.5 mile west of U.S. Highway No. 90. Plans and specifications are complete and the project was advertised on 13 February 1986. Bid opening is scheduled for 18 March 1986. It is anticipated this project will be completed by August 1986.

GREENS CREEK, PETAL, MISSISSIPPI

Greens Creek is a tributary of the Leaf River in Forrest County, Mississippi. Reconnaissance studies, conducted under the authority of Section 205 of the Flood Control Act of 1948, as amended, indicated that detailed studies of flood control in the Petal, Mississippi, area were warranted. The detailed studies of channel enlargements and diversion of flood flows are scheduled for completion in September 1986.

LEAF AND BOWIE RIVERS, HATTIESBURG AND PETAL, MISSISSIPPI

A detailed project report recommending flood damage reduction measures be undertaken on the Leaf and Bowie Rivers at Hattiesburg and Petal, Mississippi, was completed in August 1983. The recommended plan consists of clearing and snagging of the Leaf River Channel and overbank clearing for a distance of 12,500 feet downstream of the United States Highway 11 Bridge. Erosion protection will be required at the Southern Railroad and Hardy Street Bridges. The plan also requires relocation of a sanitary sewage facility at Petal. Plans and specifications for the project were completed in October 1985. Eleven bids were received on 16 January 1986. Construction is scheduled for completion in February 1987.

UPPER GORDONS CREEK, HATTIESBURG, MISSISSIPPI

Gordons Creek, a tributary of the Leaf River, flows through Hattiesburg in Lamar and Forrest Counties, Mississippi. A report was prepared under the authority of Section 205 of the Flood Control Act of 1948, as amended, addressing the feasibility of providing flood control. A feasible channel enlargement plan has been identified which would reduce average annual damages in the basin by about 70 percent. Completion of the detailed project report is expected in April 1986.

MAGBY CREEK, COLUMBUS, MISSISSIPPI

Magby Creek is a tributary of Luxapalila Creek and enters the Luxapalila Creek near Columbus in Lowndes County, Mississippi. Studies are being conducted under the authority of Section 205 of the Flood Control Act of 1948, as amended. The detailed project report for improvements along the lower three miles is scheduled for completion in July 1986.

NOXUBEE RIVER RELIEF BRIDGE, SHUQUALAK, MISSISSIPPI

The project is located about eight miles northeast of Shuqualak, Mississippi, in Noxubee County. Under authority of Section 14 of the Flood Control Act of 1946, a report was completed in January 1984 addressing the feasibility of protecting the country road relief bridge from erosion resulting from unusually high Noxubee River flows. Plans and specifications were completed in April 1985. Advertisement of project is awaiting the local sponsor to obtain necessary rights-of-ways. It is anticipated the project will be advertised in April 1986 and construction completed in early fall 1986.

OLD HIGHWAY 82 BRIDGE, COLUMBUS, MISSISSIPPI

The bridge is located at the Old United States Highway 82 crossing of the Tombigbee River near Columbus, Mississippi. A report addressing the feasibility of providing stream bank erosion protection for the bridge under the authority of Section 14 of the Flood Control Act of 1946 was approved on 5 July 1984. Construction was completed in December 1985.

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ORANGE GROVE COMMUNITY, MISSISSIPPI

Detailed studies of flooding by the Escatawpa River in the Orange Grove Community in Jackson County, Mississippi, has been completed under the authority of Section 205 of the Flood Control Act of 1948, as amended. Flood control alternatives are not feasible. Nonstructural measures to reduce damages are not feasible. A report which recommended no Federal action was completed in FY 1985.

BRIDGE OVER GOODFOOD CREEK, CHICKASAW COUNTY, MISSISSIPPI

The bridge is located approximately 12 miles northwest of the City of Okolona in Chickasaw County on a county road known locally as David Lake Road. Under the authority of Section 14 of the Flood Control Act of 1946, a report was completed in May 1985 addressing the feasibility of protecting the county road from erosion. Preparation of plans and specifications were initiated in February 1986. It is anticipated that a construction contract will be advertised in April 1986 and project construction will be completed in November 1986.

TALLABINNELA CREEK, PLEASANT VALLEY ROAD, PRENTISS COUNTY, MISSIESIPPI

The Pleasant Valley Road crosses Tallabinnela Creek 3.5 miles northwest of the City of Okolona in the northwestern part of the County. Under the authority of Section 14 of the Flood Control Act of 1946, a report was prepared in June 1985 addressing the feasibility of protecting the Pleasant Valley Road from erosion. Preparation of plans and specifications were initiated in February 1986. It is anticipated a construction contract will be advertised in April 1986 and project construction will be completed in November 1986.

TRIM CANE CREEK, CLAY COUNTY, MISSISSIPPI

Trim Cane Creek rises in western Oktiffeha County and flows generally in an easterly and then a northeasterly direction through Oktiffeha and Clay Counties, Mississippi to join Line Creek at mile 6.87. Line Creek is a tributary to the Tibbee River. Under the authority of Section 205 of the Flood Control Act of 1948, as amended, a project was constructed in FY 1948 along Trim Cane Creek from mile 0.2 to 1.8. Modification of this project was approved in 1985 to extend the project 0.7 miles downstream. Construction is scheduled for FY 1987.

BRIDGE OVER BIG BROWNS CREEK AND TRIBUTARY, MARIETTA-HAZELDELL ROAD, PRENTISS COUNTY, MISSISSIPPI

The Marietta-Hazeldell Road Bridge crossing Big Browns Creek and Big Browns Creek Tributary are located about 2.0 and 2.2 miles, respectively, east-northeast of Marietta in Prentiss County, Mississippi. Under the authority of Section 14 of the Flood Control Act of 1946, a report was completed in June 1985 addressing the feasibility of protecting the Marietta-Hazeldell Road from erosion. Preparation of plans and specifications were initiated in February 1986. It is anticipated a construction contract will be advertised in April 1986 and project construction will be completed in November 1986.

MARTIN CREEK, ALTITUDE ROAD BRIDGE, PRENTISS COUNTY MISSISSIPPI

The Altitude Road bridge crossing Martin Creek is located about 6.7 miles east—southeast of Booneville in Prentiss County, Mississippi. Under the authority of Section 14 of the Flood Control Act of 1946, a report was completed in November 1985 addressing the feasibility of protection of Altitude Road bridge from erosion. Preparation of plans and specifications were initiated in February 1986. It is anticipated a construction contract will be advertised in April 1986 and project construction will be completed in November 1986.

MIXON CREEK, LAMAR COUNTY MISSISSIPPI

Mixon Creek is a tributary of the Bowie River that flows through suburbs of Hattiesburg in Lamar and Forrest Counties, Mississippi. Local officials requested assistance under Section 205 of the 1948 Flood Control Act, as amended, on 7 June 1983. An initial appraisal report was completed in January 1985. Reconnaissance studies of the flooding problems are underway and scheduled for completion in August 1986.

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OPERATION AND MAINTENANCE—BILOXI HARBOR, MISSISSIPPI

The Biloxi Harbor, located in Harrison and Jackson Counties, Mississippi, is utilized by commercial traffic primarily hauling coal, lignite and petroleum products. Maintenance dredging of the Biloxi East Access, Lateral and West approach channel was completed in July 1984. Dredging of the Back Bay and Ott Bayou portions of the project is scheduled for FY 1986. A contract for dredging in the Mississippi Sound channel is scheduled for Fiscal Year 1987.

CADET BAYOU, MISSISSIPPI

Cadet Bayou is located in the southeast portion of Hancock County Mississippi, about 10 miles southeast of Bay St. Louis, Mississippi. The project provides access to the Mississippi Sound for the commercial and sport fishing industry. Maintenance dredging for the Mississippi Sound and inland portion of the project was last performed in 1970 and 1982, respectfully. The development of long-term upland disposal areas is the key to future maintenance of the inland portion of the project. At the local sponsor's request, a study of navigation improvements at Cadet Bayou is being held in abeyance since they could not provide the assurances of upland disposal areas.

EAST FORK, TOMBIGBEE, MISSISSIPPI

Th project is located in Itawamba County, Mississippi and consists of clearing, snagging and sediment removal in the 53 miles of channel and 13 cutoffs. A supplement to the Environmental Impact Statement addressing sediment removal from the channels has been completed. A contract for channel snagging and debris removal is scheduled to be awarded in FY 1986. Funds included in Fiscal Year 1987 budget will be used for clearing, snagging and sediment removal at selected locations throughout the project.

GULFPORT HARBOR, MISSISSIPPI

Gulfport Harbor is located in Harrison County, Mississippi, about equal distance from New Orleans, Louisiana and Mobile, Alabama. The project provides for a ship channel about eight miles long across Ship Island Bar and about 11 miles long through Mississippi Sound to an anchorage basin at Gulfport. The project also includes a 26 acre commercial small boat harbor with an entrance channel. The principle commodities shipped through the harbor are: farm products, lumber and wood products, petroleum products, iron and steel products, chemicals, and fish. Hopper dredging of the outer bar channel is scheduled for FY 1986. A dredging contract for the Mississippi Sound Channel and Turning Basin is scheduled for FY 1987.

OKATIBBEE LAKE, MISSISSIPPI

Okatibbee Lake is located about seven miles northwest of Meridian, Mississippi, in Lauderdale and Kemper Counties. The project provides for a dam and reservoir for flood control, water supply, water quality, and recreational purposes. Funds included in the Fiscal Year 1987 budget will be used primarily for operation and maintenance of the dam and lake.

PASCAGOULA HARBOR, MISSISSIPPI

The Pascagoula Harbor is located about 100 miles east of New Orleans, Louisiana, and about 45 miles west of Mobile, Alabama. The project provides for a channel from the Gulf of Mexico across the Mississippi Sound to and into the Pascagoula River and a channel from the Mississippi Sound to Bayou Casotte Harbor near Pascagoula, Mississippi. The channels are used to ship grains, ore, fish and shellfish, farm and animal products, lumber and wood products, petroleum, nonmetallic minerals and chemicals, and fertilizers. Maintenance pipeline dredging of the Mississippi Sound and Bayou Casotte channels will be required in Fiscal Year 1986. Hopper dredging of the outer bar channel for the entrance channel is scheduled for Fiscal Year 1987. Pipeline dredging of the Mississippi Sound, River and Bayou Casotte Channels is scheduled for Fiscal Year 1987, also.

TENNESSEE-TOMBIGBEE WATERWAY, ALABAMA AND MISSISSIPPI

The project is located in west central Alabama and northeastern Mississippi and provides for a 234-mile navigation channel from near Demopolis, Alabama to the Tennessee River near the common boundary of Alabama, Tennessee, and Mississip-

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pi. The waterway consists of three distinct sections; 149-mile River Section with a 9-by 300-foot channel, four locks and dams from near Demopolis, Alabama to near Amory, Mississippi; 46-mile Canal Section with a 12-by 300-foot channel and five locks from near Amory, Mississippi to Bay Springs Lock and Dam; and a 39-mile Divide Section with a 12-by 280-foot channel from Bay Springs Lock and Dam to the Tennessee River. The total navigation lift of 341 feet is accomplished by the ten locks. The Waterway was opened on 16 January 1985 and dedicated on 1 June 1985. The requested funds are necessary to provide for the routine operations and maintenance of locks and dams as well as channel maintenance which includes dredging and snagging. Recreation and resource management activities will also be performed.

WOLF AND JORDAN RIVERS, MISSISSIPPI

The Wolf and Jordan Rivers navigation project is located in the St. Louis Bay, 54 miles east of New Orleans, Louisiana, and 18 miles west of Gulfport, Mississippi. The project provides for a channel from St. Louis Bay into the mouth of both rivers. The Wolf River portion of the project is currently inactive. The Jordan River portion is used for shipment of marine shells, pulpwood and timber. Funds requested for FY 1987 will be utilized for dredging the Jordan River portion of the project.

Questions Submitted by Honorable Jaime B. Fuster, the Delegate From Puerto Rico

PORTUGUES AND BUCANA RIVERS, PUERTO RICO

Question. Why are three separate Section 221 agreements required for this project?

Answer. The Chief's report recommended a single project. However, the Flood Control Act of 1970 authorized the Portugues and Bucana Rivers Project as three projects—Channel improvements to provide flood protection to Ponce, the Cerrillos reservoir with water supply, recreation, and flood control features, and also the Portugues Dam with the same features.

Question. Are there any major differences in the requirements associated with the 221 agreements?

Answer. There are some major differences in the water supply repayment interest rates. The interest rate for the Cerrillos Dam was established at 6.063 percent in the 221 Argeement signed in March 1982. The interest rate for the Portugues Dam water supply repayment would be approximately 11 percent. The channel portion of the project was only authorized for flood control and recreation benefits. Rights-of-way, easements, and relocations (including bridges) were provided by the local Government.

Question. Have local interests responded favorably to pursuing the Portugues Dam at the higher interest rate?

Answer. We have indications that the Commonwealth is still very much interested in pursuing the Portugues Dam if the same interest rate used for the Cerrillos Dam is approved; however, they have indicated the higher rate would make the Portugues Dam extremely difficult to support because of the high pay back for water supply.

Question. Will the same level of flood protection be provided the City of Ponce if the Portugues Dam is not constructed?

Answer. If the Portugues Dam is not constructed, Ponce would not have standard project flood protection, a flood which has a recurrence interval of less than once in 100 years. The three project elements together would provide standard flood protection, which would, as I just indicated, essentially free Ponce from flooding. In the absence of the Portugues Dam, the level of protection would be substantially less, about a 35-year level of protection.

CERRILLOS DAM, PUERTO RICO

Mr. BEVILL. By the way, is that dam completed in Puerto Rico?

General EDGAR. No, sir. It is under construction.

Mr. BEVILL. I was down there 10 years ago when they were building it. How long is it going to take?

General EDGAR. I think what you saw were maybe the beginnings of the channel improvements which prevented considerable financial damage as a result of Hurricane Isabel this past fall. It is

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indeed fortunate we did start out with those channels. Without that, those $25 million in damages would certainly have occurred.

The dam construction, as a matter of fact, wearing my old hat, I participated in the groundbreaking of that a year or so ago.

Mr. MYERS. Are the mangroves still growing full-blast?

We were down there. The mangroves were taking over everything.

General EDGAR. They grow quickly, Mr. Myers.

Mr. MYERS. And you sure can't do a thing about them?

General EDGAR. That is right, sir.

Mr. MYERS. Next thing we will have people protecting water hyacinths, I suppose. Thank you.

Mr. BEVILL. I see our old friend General Gay in the audience. We are glad to have you with us.

This testimony sounds a little familiar to him, I am sure.

Also, our friend, General Pat Kelly, is here. His ears perk up every time we mention the Tenn-Tom. His leadership played a big role in getting this project completed. He will, naturally, listen any time he hears anything about the Tenn-Tom.

We are glad to have you with us, General.

Our friend Clay Sanders from the Jacksonville District is with us today. Clay, we appreciate the good assistance you have been giving the Members and staff of the Subcommittee. Thank you.

Congressman Watkins has come in. The Chair recognizes Congressman Watkins.

Mr. WATKINS. General, do you have anything in your South Atlantic area going on in Central America?

General EDGAR. Yes, sir.

Mr. WATKINS. Could you tell me what countries those are; what you are doing there?

General EDGAR. We are doing work in El Salvador. I hesitate a moment, sir, simply because some of the work we are doing with military money and some we are doing with funds provided by other agencies.

Mr. WATKINS. I assure you, I will be trying to find out where it is all being used.

General EDGAR. I understand. I will make sure that which we are using is supplied for the record.

Mr. WATKINS. Please provide it for the record. I might be asking for a briefing before this committee on classified information, if necessary.

I am deeply concerned about how much of the civil appropriation is being used outside of this country. Are you requiring any of these areas to have up-front financing?

General EDGAR. No sir. All our work outside the States is funded by someone else. Another agency is providing us the money for our people to do the work we are doing.

Mr. WATKINS. The United States of America taxpayers are providing it?

General EDGAR. Yes, sir, through the military appropriations.

Mr. WATKINS. I would like that information made part of the record.

[The information follows:]

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WORK FOR FOREIGN GOVERNMENTS

We are doing work in Costa Rica, El Salvador, Honduras, and Panama with military appropriations. In addition, we are providing engineering assistance to the Panama Canal Commission in Panama and to the Agency for International Development in El Salvador using funds provided by those agencies. No civil appropriations are being utilized for any work outside the United States.

Mr. BEVILL. I think that is a very good question, General. If there is any civil appropriated money being used in foreign countries, we would like to know how much and what it is being used for and who gave you the authority to do it.

General EDGAR. Yes, sir.

Mr. BEVILL. General Edgar, thank you again.

We will stand in recess for five minutes.

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WEDNESDAY, FEBRUARY 26, 1986.

SOUTH PACIFIC DIVISION

WITNESSES

BRIGADIER GENERAL DONALD J. PALLADINO, DIVISION COMMANDER
ACHIEL E. WANKET, CHIEF, ENGINEERING DIVISION
PHILLIP F. DUNN, JR., CHIEF, PLANNING DIVISION
EDWARD J. O'NEILL, JR., CHIEF, PROGRAM DEVELOPMENT OFFICE
NICK M. ROMANZOV, ASSISTANT CHIEF, PROGRAM DEVELOPMENT OFFICE
ELIZABETH L. VARNER, PROGRAM ANALYSIS OFFICER, PROGRAM DEVELOPMENT OFFICE

Mr. BEVILL. The committee will come to order.

General Palladino, we are delighted to have you with us. You may proceed as you wish.

INTRODUCTION

General PALLADINO. Mr. Chairman, and members of the committee, I am pleased to report to you on the status of civil works activities under the jurisdiction of the South Pacific Division and to present the details of our fiscal year 1987 budget. I have with me Ace Wanket, Chief of Engineering; Frank Dunn, Chief of Planning; Ed O'Neill, Chief of Program Development; Nick Romanzov, Assistant Chief of Program Development; and Betty Varner, our Senior Program Analyst. Before I present my prepared status report, I would like to update the committee on the recent devastating floods that occurred in California and Nevada.

STORMS OF FEBRUARY 1986

A 3,000-mile-long storm front, billed as the Storm of '86, hit the California coast on Valentine's Day. As the storm approached, we were uncertain which areas were most severely threatened. However, it soon became apparent that northern California would bear the brunt of the storm.

COASTAL AREA STREAMS

Rivers in Napa, Marin, and Sonoma Counties swelled to record levels and forced residents from their homes. Pacific Gas and Electric Company reported 200,000 outages. The Napa River reached the flood of record with approximately 25 inches of rain occurring within a four day period. More than 5,000 people were evacuated leaving 25 percent of the city of Napa under water and causing major road closures.

Residents of Petaluma were forced to leave their homes three different times. At Guerneville, the Russian River flows reached its

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highest elevation in history, 17 feet above flood stage. 450 people had to be airlifted by the Army National Guard. These unprecedented levels even caused evacuation centers to be relocated.

Had it not been for the recently completed Warm Springs Dam, where the pool came up 70 feet, the record river level at Guerneville would have been four feet higher.

In the City of Novato, over 100 homes were evacuated. Flood flows on Corte Madera Creek in Marin County exceeded the entrance capacity of the channel. In fiscal year 1987, we hope to be able to proceed with construction of Unit 4, thereby capturing the flood flows to prevent the flooding that occurred at Ross and San Anselmo.

Approximately 75 miles south of San Francisco in Gilroy, the site of the authorized Pajaro River Project sudden flooding gave residents little notice, causing localized flooding along Uvas Creek and evacuation of 250 residents.

Before the weekend ended, as the storm moved east, havoc and widespread damage moved into the East Bay causing flooding on Wildcat Creek. By Monday, the effects of the storm were felt inland, resulting in the closure of I-80, isolating the community of Fairfield. In addition localized flooding in Fairfield stranded many residents.

STATE OF NEVADA

In the State of Nevada, we experienced flooding in Carson City and Reno. 200,000 sandbags were provided to prevent overflow of the Truckee River. In the nearby community of Sparks, there was widespread flooding caused by the 60-year occurrence. Estimated damages in the Truckee Meadows area were $16 million.

SACRAMENTO RIVER FLOOD CONTROL SYSTEM

Next, I will cover the Sacramento River Flood Control System including dams, levees and bypass channels which were severely tested. 130 miles north of Sacramento at Tehama, along the Sacramento River, over 200 residents were evacuated from their homes. Further downstream at the Woodson Bridge, the river crested seven feet above flood stage, causing further evacuation.

At the upstream end of the Sacramento River Flood Control Project, Black Butte Lake filled. Flows passed over the spillway and progressed downstream into the Sacramento River. The bypasses were flowing to capacity as excess flows passed from the river over the control weirs.

Further downstream, in the vicinity of Robbin's, a slipout weakened the levee. Prompt action permitted 400 people, who had been evacuated earlier, to return safely to their homes.

A week after the storm began, in the vicinity of the confluence of the Feather and Yuba Rivers, the towns of Linda and Olivehurst were extensively flooded due to a 150 foot breach in the project levee near Marysville. The levee break was subsequently filled two days later using Corps Public Law 99 authority.

Also in the basin, Clear Lake, which feeds Cache Creek, crested a record 4 feet above flood stage, inundating residential areas. Below Clear Lake, in Capay Valley, bank erosion added to the flooding

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problems and the previously filled downstream settling basin passed the total sediment load into the Yolo Bypass.

Flash floods just northeast of Sacramento, on Dry Creek, in Roseville, caused damages to businesses and homes estimated at about $4 million. The surging water continued downstream causing over $10 million in related damages in Rio Linda.

Just south of Dry Creek on the American River, flood flows of over 200,000 cubic feet per second caused the controlled failure of the cofferdam at the Auburn Dam site and filled Folsom Lake to its historic level, requiring record releases of 130,000 cubic feet per second. These record flows surged downstream along the American River, and 500 people were put on levee watch as the highest stages on record passed through the heart of Sacramento. The record flows stressed the levees requiring emergency action to control seepage.

Just north of the confluence of the American and Sacramento Rivers, remedial action was necessary to restore levee integrity and reduce the threat to the Sacramento metropolitan area. The culmination of all basin flows resulted in a river flow of 650,000 cubic feet per second, which was 150 percent of that previously recorded. As a frame of reference, we normally experience flows between 10,000 and 30,000 cubic feet per second. Here was an experience of 650,000 cubic feet per second, at its peak. These flows inundated Rio Vista with hundreds evacuated from their homes. However, the sustained high flows, coupled with tidal action, caused relatively few breaks in the 1,100 miles of delta levees.

DELTA LEVEES

The breaks occurred on Tyler Island and the New Hope Tract, inundating 18,300 acres and causing the evacuation of 600 people. At the north end of Tyler Island, we constructed an emergency levee to protect the town of Walnut Grove. At the town of Thornton, where extensive damage occurred, a 275 foot long levee break was closed.

ESTIMATED STORM DAMAGE

Finally, for the thousands of Sacramento Valley residents protected by flood control levees, the terrifying memories of this storm will be recalled for many years.

Now that the skies have cleared and the floodwaters are receding, the challenge of cleanup has just begun. The enormity of this damage is staggering. At least nine deaths are attributed to the storms. In California alone, over 10,000 homes were damaged, and State and local officials have estimated over $300 million in total damages were sustained. In the State of Nevada, damages amount to $27 million. As great as the damage was, it would have been much greater if Corps of Engineers flood control projects had not been in place. These projects prevented at least $1.4 billion in additional damages. Furthermore, projects on the drawing board, if constructed, could have prevented over $100 million in additional damages.

From our recent experience, it is evident that a water resources authorization bill is urgently needed.

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REGIONAL CHARACTERISTICS

Now, sir, with regard to my prepared statement, the South Pacific Division area includes nearly one-fifth of the land mass of the contiguous 48 states. Rapid population growth continues to be a major factor in projecting our region's future needs. In the five years since the 1980 census, our population has increased 13 percent, and is forecast to grow at a comparable rate through the end of this century. Commerce handled by California's ports has paralleled population growth, thereby creating an urgent need to modernize our navigation system. The increase in population has encouraged development in our flood plains. We are also faced with development in upper basin areas, which has increased runoff, making once flood-free lower basin areas subject to flooding. The President's fiscal year 1987 civil works budget permits us to continue to aggressively respond to these needs.

FY 1987 BUDGET REQUEST

The budget includes $187.8 million, compared to $160.8 million provided for the current year. The program increase is actually greater, since 10 of the 17 budgeted studies, and 9 of the 24 construction projects are subject to the new cost-sharing arrangements.

GENERAL INVESTIGATIONS

The budget includes $10.9 million for our general investigations program, compared to $13.2 million provided for the current year. Of this amount, $5.8 million is included to begin one study, continue 14, and complete two. Cost-sharing will go into effect on 15 March 1986 on six studies where we have existing cost sharing agreements.

MARIN COUNTY SHORELINE-SAN RAFAEL CANAL

The proposed new study, of the San Rafael Canal in Marin County, California, will examine serious flooding problems caused by a combination of runoff and high San Francisco Bay tides. The area subject to flood damage contains about 3,000 properties with an estimated value of $250 million. The budgeted funds will permit completion of the reconnaissance phase.

LOS ANGELES COUNTY DRAINAGE AREA—PREVIEW

One of our most urgent studies is examining the adequacy of completed flood control channels and dams protecting densely developed portions of Los Angeles County. To date, the existing project has prevented damages of about $3.6 billion. However, increased runoff, caused by the development in the watershed, has seriously degraded the level of protection provided by the project. Our studies indicate that the existing project is no longer capable of fully controlling a 50-year storm event, and we are quite concerned. The $1,150,000 in the budget will permit us to vigorously pursue our analysis and identification of potential solutions.

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SACRAMENTO-SAN JOAQUIN DELTA

The budget also includes $250,000 to continue studies of the complex flood protection and water transport problems in the Sacramento-San Joaquin Delta. We are working closely with the California Department of Water Resources and the Bureau of Reclamation to develop coordinated studies of these problems. At present, plans call for the State and the Bureau to identify a viable water transport plan, and for the Corps to develop a compatible flood control plan.

SAN FRANCISCO BAY SHORELINE

The budget includes $840,000 to continue examining flooding problems along the San Francisco Bay shoreline in Alameda, San Mateo and Santa Clara Counties, and to begin full-scale feasibility studies of the North Bay shoreline in Sonoma, Napa and Solano Counties.

GREAT SALT LAKE

At the Great Salt Lake in Utah, we will be investigating the feasibility and Federal interest in measures to control high lake stages. Rising lake levels caused annual flood damages of about $100 million in both 1984 and 1985, and there is a potential of far greater damages if lake levels rise significantly.

CONTINUATION OF PLANNING AND ENGINEERING

Under the Continuation of Planning and Engineering category, the budget includes $5.2 million for design of four projects.

OAKLAND INNER HARBOR

With the $415,000 for the Oakland Inner Harbor project, we will complete design to deepen the existing 35-foot-deep channel to 42 feet. The project will also widen portions of the channel, and provide a 1,200-foot diameter turning basin to modernize the port's general navigation features.

CACHE CREEK BASIN

Funds provided for the current year will permit completion of design of the lower basin element of the Cache Creek basin project. This element of the plan provides for enlarging the existing Cache Creek settling basin to restore the basin's sediment storage capacity. The budget includes $500,000 to continue design effort to expand the capacity of the Clear Lake outlet channel in the upper basin. A number of complex environmental, institutional, and cultural resource issues remain to be resolved on the upper element.

GUADALUPE RIVER

Design of flood control improvements along the Guadalupe River in downtown San Jose will continue with the $750,000 in the budget. The flood control plan is a critical element of an overall local plan to redevelop the downtown area, and would provide a high level of protection to over 500 commercial businesses, 2,400

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residences, four major traffic arteries, and the San Jose International Airport.

SANTA ANA RIVER

Our largest request for continuing design is $3.5 million for the Santa Ana River project in southern California. We believe that this project will alleviate one of the most serious flood threats in the nation. With fiscal year 1986 funds, we completed the study of upstream storage alternatives to the Mentone Dam, as directed by this committee, and forwarded it to the Board of Engineers for rivers and harbors for review. The proposed alternative to Mentone Dam is a reservoir further upstream. With the remaining funds available this year, and with the budget request for next year, we will continue design of modifications to the Prado Dam and downstream channels.

CONSTRUCTION, GENERAL

For our construction program, $118.7 million is included in the budget compared to $84.6 million expected to be available this year. Budgeted funds will permit us to begin construction of three projects, continue 19, and complete two.

OAKLAND OUTER HARBOR

The first of our three proposed new construction starts is the Oakland Outer Harbor project. The plan of improvement provides for deepening the existing navigation channels from 35 to 42 feet, widening the entrance channel, and constructing an enlarged turning basin. The total estimated project cost is $28.1 million, and the benefit-to-cost ratio is 3 to 1.

PAJARO RIVER

The Pajaro River project, located about 75 miles south of San Francisco, will protect portions of the City of Gilroy from damaging flood flows along Uvas Creek. The plan of improvement provides for construction of a 2.2-mile-long levee, modification of two bridges, and 3.4 miles of hiking and bicycle trails. Total estimated project cost is $5.8 million, and the benefit-to-cost ratio is 2.1 to 1.

REDBANK AND FANCHER CREEKS

The Redbank and Fancher Creeks project in the Fresno-Clovis metropolitan area, consists of modifications to the existing Big Dry Creek Dam, construction of the Fancher Creek Dam and three detention basins. The overall project will cost about $73.5 million, and the benefit-to-cost ratio is 1.6 to 1.

FISHERMAN'S WHARF

Construction of the breakwater to protect the Fisherman's Wharf area on San Francisco's waterfront is well underway. The $550,000 included in the budget will allow completion of this important effort.

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RICHMOND HARBOR

Negotiations are underway to develop a local cooperation agreement for Richmond Harbor, one of the fiscal year 1985 new construction starts. The total project cost is estimated at $25.8 million, of which the ultimate non-Federal share would be $9 million. The project is scheduled for completion in September 1988.

SACRAMENTO RIVER DEEP WATER SHIP CHANNEL

The Sacramento River Deep Water Ship Channel is a fiscal year 1985 new start. The project provides for widening and deepening the existing 30-foot channel to provide 35-foot depth. The sponsor has requested that we schedule construction over an eight-year period to ease the financial burden on the port, and the local cooperation agreement under negotiation considers this proposal. The total project is estimated to cost $98.3 million, of which the sponsor's share is $45.4 million. The Committee will be pleased, I am sure, to note that a recent well-publicized visitor to the San Francisco Bay Area definitely verified that the existing channel was too shallow.

PHOENIX, ARIZONA AND VICINITY

Our largest single budget request, of $32 million, will permit continuation of construction of the Arizona Canal Diversion Channel feature of the Phoenix, Arizona and Vicinity project. As directed by this Committee, the economic evaluation of the dreamy draw to Cudia City wash portion of the project is underway and will be completed later this year. The overall project remains on schedule for completion in September 1991.

FAIRFIELD VICINITY STREAMS

The Fairfield vicinity streams project, another fiscal year 1985 new start, was modified by the Further Continuing Appropriations Act for Fiscal Year 1986. The continuing resolution provided that costs incurred by local interests for work reasonably compatible with our current plan, accomplished after 31 December 1973, be credited towards their share of total project costs. The local cooperation agreement is being negotiated on this basis. The remaining project work will cost about $21.3 million. The non-Federal share would be $11.7 million, including a cash contribution of $1.4 million, which may be substantially reduced, or eliminated, once we evaluate the work completed by local interests.

MERCED COUNTY STREAMS

Negotiations are underway for development of a local cooperation agreement for the Merced County Streams project. The total project is estimated to cost $104 million, and the local share will be about $40.9 million. We understand that a modification in State legislation, increasing the sponsor's authority, may be necessary prior to execution of the local cooperation agreement.

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SACRAMENTO RIVER, CHICO LANDING TO RED BLUFF

On the Sacramento River Chico Landing to Red Bluff project, we have advised the project sponsor of the additional local cooperation requirements contained in the committee's report on fiscal year 1986 appropriations. In partial response to this guidance, the sponsor intends to install a test section of bank protection at the Woodson Bridge site, using the Palisades method. All other construction activity has been postponed until after fiscal year 1987 in view of a decision by the U.S. Fish and Wildlife Service that the project would jeopardize the habitat of the threatened valley elderberry longhorn beetle. The funds available for this fiscal year, and the funds requested in the budget, will be used to continue studies in an effort to resolve the project mitigation requirements.

WILDCAT AND SAN PABLO CREEKS

The project for Wildcat and San Pablo Creeks has not been physically started. Consequently, while not a fiscal year 1985 new start, the new cost-sharing arrangements apply to the project. Negotiations are currently underway to develop an appropriate cost-sharing agreement.

LITTLE DELL LAKE

The Little Dell Lake project, designed to protect portions of Salt Lake City from floods, and for water supply, was a new start in fiscal year 1985. The local sponsors are willing to cost share in the project. However, the cost of the project, as formulated last year, exceeds the sponsor's financial ability. Accordingly, the sponsor requested that we develop a smaller project which they would be able to afford. We have developed a reduced scope project which, while not yet fully reviewed, appears acceptable to the sponsors, and negotiations are proceeding on that basis.

OPERATION AND MAINTENANCE, GENERAL

The budget includes $58.2 million for essential operation and maintenance activities compared to $63 million provided for the current year. The reduction in our funding level reflects completion, in the current year, of our program to repair navigation structures damaged in the winter storms of 1983, such as those at Humboldt and Crescent City Harbors.

Mr. Chairman, this concludes my presentation.

Mr. BEVILL. Thank you. We will insert the justification material for the South Pacific Division in the record at this point, without objection.

[The justifications follow:]

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Justification of Estimates for Civil Functions Activities
Department of the Army, Corps of Engineers
Fiscal Year 1987
SUMMARY SOUTH PACIFIC DIVISION

	FY 1986 Allocations $	FY 1987 Request $	Increase or Decrease $
General Investigations			
Surveys including Phase I Stage of AE&D	6,884,000	5,764,000	-1,120,000
Continuation of Planning and Engineering	6,885,000	5,165,000	-1,720,000
Advance Engineering and Design	0	0	0
Construction, General			
Continuation of Engineering and Design	0	0	0
Construction	80,689,000	109,770,000	+29,081,000
Major Rehabilitation (Continuing) and Dam Safety Assurance	7,700,000	8,900,000	+1,200,000
Operation and Maintenance, General			
Project Operations and Maintenance	63,000,000	58,232,000	-4,768,000
Major Rehabilitation (Continuing)	0	0	0
TOTAL	$165,158,000 1/	$187,831,000	+$22,673,000

1/ Does not reflect reduction required by the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177).

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APPROPRIATION TITLE: General Investigations, Fiscal Year 1987 — South Pacific Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

1. SURVEYS - NEW:

a. Navigation Studies: None

b. Flood Damage Prevention Studies: The amount of $260,000 is required in Fiscal Year 1987 to initiate and complete one flood damage prevention reconnaissance study.

California

Marin County Shoreline, San Rafael Canal	260,000	0	0	260,000	0

The study area is located in the city of San Rafael, California, 10 miles north of San Francisco. San Rafael Canal provides the outlet for San Rafael Creek into San Francisco Bay and also provides access for recreational vessels to upstream marinas. The canal is surrounded by San Rafael's central business district and dense residential areas. The total estimated current value of the approximately 3,000 properties along the canal subject to flooding is $250 million. Approximately four square miles of high density development is located on bay fill along the canal, which has experienced continued land subsidence. In January 1982, storm runoff from the creek, combined with high tides on the bay and strong easterly winds, caused overtopping of the canal and extensive flooding of surrounding commercial and residential properties. Damages attributed to this event were approximately $2.8 million. An initial flood control feasibility appraisal, conducted under the Continuing Authorities Program, indicated that viable flood control solutions probably exist for the canal, but that these solutions were beyond the scope of the Continuing Authorities Program. The Marin County Flood Control and Water Conservation District submitted a letter dated 14 February 1985, expressing their willingness to consider participation in the feasibility phase of the study and construction of a project consistent with the proposed cost sharing requirements. Fiscal Year 1987 funds will be utilized to fully fund the reconnaissance phase at full Federal expense. The reconnaissance phase is scheduled for completion in March 1988.

c. Shoreline Protection Studies: None

d. Special Studies: None

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
e. Comprehensive Studies: None					
f. Project Review Studies: None					
TOTAL SURVEYS - NEW	260,000	0	0	260,000	0

2. SURVEYS - CONTINUING

a. Navigation Studies: The amount of $175,000 is requested for the continuation of one study during Fiscal Year 1987.

California

Ventura Marina Review	635,000	250,000	100,000	175,000	110,000

Ventura Marina is located on the coast of Southern California about 70 miles northwest of Los Angeles and Long Beach Harbors, and about 6 miles northwest of Channel Island Harbor. The study area includes three jetties, an offshore breakwater, a sand trap leeward of the breakwater, an entrance channel, and commercial and recreational facilities. Under certain winter sea conditions, considerable wave action occurs at the downcoast end of the breakwater, creating a navigation hazard for boats using the harbor. The frequent winter shoaling of the entrance channel is also hazardous to navigation. Approximately $1.6 million is spent annually to maintain the entrance channel and sand trap. Because of environmental concerns, storm conditions, and recreation usage, this maintenance program is limited to four months out of the year, which causes the harbor to be unusable for about two months each year. In 1985, over $30 million in gross sales activity occurred within the boundaries of Ventura Marina, of which almost $16 million was business activity directly dependent on an adequate entrance channel. This study will address possible solutions to the navigational problems at the harbor entrance, including improvement of the detached breakwater and/or redesign of the sand trap to reduce shoaling. The Ventura Port District, the local sponsor, is strongly committed to a modification of the harbor and fully understands the cost sharing requirements.

Fiscal Year 1985 funds were used to fully fund the reconnaissance phase at full Federal expense. The feasibility phase is being initiated in Fiscal Year 1986 upon agreement by the local sponsor to share 50 percent of the costs of the feasibility phase . The funds requested for Fiscal Year 1987 will be used to continue the Federal share of the feasibility phase of the study. The estimated cost of the feasibility phase is $770,000.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

a. Navigation Studies: California, Ventura Marina Review (Cont)

A summary of study cost sharing is as follows:

Total Estimated Study Cost	$1,020,000
Reconnaissance Phase (Federal)	250,000
Feasibility Phase (Federal)	385,000
Feasibility Phase (Non-Federal)	385,000

The reconnaissance phase is scheduled for completion in May 1986. The feasibility study is scheduled for completion in September 1988.

TOTAL NAVIGATION STUDIES	635,000	250,000	100,000	175,000	110,000

b. Flood Damage Prevention Studies: The amount of $4,329,000 is requested for the completion of two studies and continuation of twelve studies during Fiscal Year 1987.

Arizona

Gila River and Tributaries, AZ & NM	5,190,000	4,094,000	375,000	276,000	445,000

The Gila River Basin extends from high mountains and plateaus in western New Mexico across Arizona to the confluence of the Gila and Colorado Rivers near Yuma, Arizona. The Gila River is 650 miles long and has a drainage area of 58,200 square miles, of which 5,600 are in New Mexico, 1,100 are in Sonora, Mexico, and 51,500 in Arizona. Population in the basin has increased from 920,000 in 1960 to 2,675,000 in 1995, and is expected to increase to approximately 3,850,000 by the year 2000. Water supply problems, typical of those throughout the southwest, are caused primarily by intermittent and insufficient streamflow. Serious ground water overdraft is occurring throughout the basin. Flood problems exist along the Gila, San Pedro, Salt, Verde, Agua Fria, Santa Cruz, Hassayampa, and Rillito Rivers, and other streams in Arizona, and along the upper Gila River in New Mexico. Population pressures are encouraging development in the area's flood plains, resulting in intensified flood problems along the basin's rivers. Floods in February and March 1978 resulted in damages of about $85 million ($130 million at 1985 prices) and the loss of 16 lives in Arizona. Floods in February and March 1980 caused $64 million in damages ($80 million at 1985 prices) and

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

b. Flood Damage Prevention Studies: Arizona, Gila River and Tributaries, AZ & NM (Cont)

claimed four lives. In October 1983, a severe storm caused damages of $228 million ($236 million at 1985 prices), primarily in the southeastern portion of Arizona, and claimed 13 lives. Extensive damages occurred along the Gila River and its tributaries upstream of Phoenix, and along the Santa Cruz River and its tributaries from the Mexican border to Gila River. Thirteen counties in Arizona and New Mexico, all in the Gila River watershed, were declared a disaster area by the President. Additional flooding occurred again in December 1984 and caused damages of $12 million in areas of Catron and Grant Counties, New Mexico, and Graham and Greenlee Counties, Arizona. The study includes four interim studies. The Rillito River interim study addressed solutions to flood and erosion control on the Rillito River and associated streams in the Tucson area. The October 1983 flood demonstrated the need to reformulate a solution on the Rillito River to address erosion. The Salt and Gila Rivers interim study is considering solutions to flood control, water conservation, and associated problems near Phoenix, Arizona. The Upper Gila River interim study is evaluating flood control, water conservation, and regulatory storage, in cooperation with the Bureau of Reclamation, in the Upper Gila drainage basin above the Camelsback damsite, in Arizona and New Mexico. Together, the two agencies developed a preliminary basin-wide comprehensive plan for flood control and water supply. This plan includes a dam for flood control and water supply at the Conner damsite, for implementation by the Bureau, which is being evaluated as a possible substitute to the authorized Camelsback Dam and potential improvements throughout the Safford Valley. Bureau studies on Conner Dam are continuing while the Corps is evaluating structural and non-structural alternatives. The Upper Gila River interim study also evaluated a promising combined levee/relocation plan for the town of Clifton. The Santa Cruz interim study is evaluating alternatives to solve agricultural flooding problems. The total study cost estimate has been increased $245,000 since last presented to Congress. This increase includes $175,000 for the Upper Gila interim: $150,000 to evaluate cultural resources and non-structural alternatives, and associated recreation, for Clifton and Safford Valley, and $25,000 for additional fish and wildlife data to complete the Environmental Impact Statement; $40,000 for the completion of the Rillito River interim; and $30,000 for Federal salary increases. Fiscal Year 1986 funds are being used to complete an interim report on flood protection for the town of Clifton, under the ongoing Upper Gila River interim study, and continue the study efforts for the remainder of the Upper Gila River interim, complete the survey report for the Rillito River interim, and complete the survey report for the Santa Cruz interim. In Fiscal Year 1987, funds will be used to conduct public and agency review of the draft survey report, incorporate comments, and finalize the report for the Upper Gila River interim. The study report of the Division Engineer is scheduled for completion in September 1990. Interim reports are scheduled for June 1986 for Rillito River, March 1986 for Clifton, March 1987 for Santa Cruz River, September 1987 for Upper Gila River, and September 1988 for Salt and Gila Rivers.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
b. Flood Damage Prevention Studies: Arizona, (Cont)					
Gila River and Tributaries, Nogales Wash	735,000	355,000	295,000	85,000	0

The study area is located in southern Arizona in the central and northern portions of the city of Nogales, in Santa Cruz County. Nogales Wash is the major drainage system for the city of Nogales. It originates in Mexico and enters Nogales as a covered floodway, which was constructed by the International Boundary and Water Commission during the 1930's. Increased urbanization in Nogales, Sonora, Mexico, population 230,000, has greatly increased runoff into the Nogales Wash flood plain, causing frequent flooding and erosion problems in Nogales, Arizona. A flood in October 1977 caused over $700,000 in damages and displaced 29 families. At October 1985 price levels, a similar flood would cause about $1.1 million in damages. Flooding also occurred along Nogales Wash in October 1983, causing about $450,000 in damages, resulting in the President declaring Santa Cruz County a disaster area. Flooding in July 1984 caused an additional $200,000 in damages in the Nogales area. The reconnaissance phase of the study indicated that erosion control and channel improvements would probably be feasible. The total study cost estimate has been increased $170,000 since last presented to Congress. This increase includes costs for additional work identified during the reconnaissance phase of $85,000 for technical and engineering analyses, $20,000 for environmental studies, $16,000 for recreational development, and $15,000 for public involvement; $20,000 for additional cost-sharing coordination; and $14,000 for Federal salary increases.

Fiscal Year 1984 funds were used to fully fund the reconnaissance phase at full Federal expense. The feasibility phase was initiated in Fiscal Year 1985 at Federal expense upon agreement by Santa Cruz County, the local sponsor, to share 50 percent of the costs of the feasibility phase after cost sharing is implemented. The effective date of implementation is 15 March 1986. The Fiscal Year 1986 and 1987 funds will be used to continue the Federal share of the feasibility phase of the study. The estimated cost of the feasibility phase is $790,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$995,000
Reconnaissance Phase (Federal)	205,000
Feasibility Phase (Federal)	530,000
Feasibility Phase (Non-Federal)	260,000

The reconnaissance phase was completed in March 1985. The feasibility study is scheduled for completion in September 1987.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
b. Flood Damage Prevention Studies: Arizona, (Cont)					
Phoenix Metropolitan Area	3,808,000	3,535,000	235,000	38,000	0

The original study area for the Phoenix Metropolitan Study, located in Maricopa County, Arizona, encompassed the cities of Phoenix, Scottsdale, Mesa, Tempe, Chandler, Gilbert, Glendale, Peoria, and Sun City. The Phoenix Metropolitan Study Report, completed in June 1982, recommended further detailed studies of the Old Cross-Cut Canal as a flood control facility. This canal is located entirely within the city of Phoenix and is in the east-central portions. The drainage area contributing storm water runoff to the Old Cross-Cut Canal comprises nearly 4 square miles and lies between Camelsback Mountain and Arizona Canal, from 40th Street to 68th Street. Runoff from Camelsback Mountain-Arcadia area results in sheetflow and ponds behind the north levee of the Arizona Canal, an irrigation facility operated by the Salt River Project. Runoff from floods exceeding the 25-year event overtops the north levee at various locations, dispersing into sheetflow through the heart of the developed residential areas below the canal. The standard project flood immediately north of the Arizona Canal would result in ponding to 5-foot depth. Below Arizona Canal, an estimated 3,000 acres of highly developed residential property would be flooded to depths varying from 0.5 to 3.5 feet. Preliminary estimate of average annual damages in the Old Cross-Cut Canal study area exceeds $2.2 million. The reconnaissance report identified an apparently viable plan for channel improvements providing protection against floods of a magnitude up to a once in 25-year frequency. The total study cost estimate increased $50,000 since last presented to Congress. This increase includes $35,000 for additional coordination efforts and $15,000 for Federal salaries.

Fiscal Year 1985 funds were used to fully fund the reconnaissance phase at full Federal expense. The feasibility phase was initiated in Fiscal Year 1985 at Federal expense upon agreement by the Flood Control District of Maricopa County, the local sponsor, to share 50 percent of the costs of the feasibility phase after cost sharing is implemented. The effective date of implementation is 15 March 1986. The Fiscal Year 1986 and 1987 funds will be used to continue and complete the Federal share of the feasibility phase of the study. The estimated cost of the feasibility phase is $595,000. A summary of study cost sharing is as follows:

Total Estimated Remaining Study Cost	$625,000
Reconnaissance Phase (Federal)	30,000
Feasibility Phase (Federal)	443,000
Feasibility Phase (Non-Federal)	152,000

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

b. Flood Damage Prevention Studies: Arizona, Phoenix Metropolitan Area (Cont)

The reconnaissance phase was completed in February 1985. The feasibility study is scheduled for completion in May 1987.

California

Los Angeles County Drainage Area - Review	5,500,000	3,544,000	370,000	1,150,000	436,000

The 2,000 square-mile Los Angeles County Drainage Area, with a current population of 7.6 million, is protected by Federal structures which include 5 major reservoirs, 22 debris basins, and 295 miles of channel improvements, as well as additional local structures. These improvements, protecting the second largest urban metropolitan area in the United States, have prevented over $3.6 billion in damages since construction. However, the floods of 1969 in Los Angeles County caused severe and widespread damages of over $12 million ($42 million in 1985 dollars), and the flood of 1980 caused damages in excess of $20 million ($28 million in 1985 dollars). As urbanization of the basin has grown over the past 40 years, the ability of the existing systems to provide design levels of protection has diminished. Many elements of the system are approaching the end of their design life, including the near exhaustion of storage reservation for sediment in the system's flood control dams. The February-March 1980 floods exceeded the capacity of the channel in the upper reaches of the Los Angeles River and very nearly overtopped the levee in the lower Los Angeles River near the city of Long Beach. Overtopping of the levee could have induced catastrophic damages to residential, commercial, and industrial properties in Long Beach. This study is a comprehensive review of the current flood potential in the Los Angeles basin, the capacity of the existing system of improvements to prevent flood damages, and the feasibility of increasing water supply in the area. Water conservation uses of flood control facilities has become increasingly important to municipal and industrial users, as southern California will gradually lose much of its Colorado River allocation over the next five years. Studies to date have identified several critical problem areas within the Los Angeles County Drainage Area system that do not provide a sufficient level of flood protection. It now appears that the project is not capable of fully controlling a 50-year, or larger, storm event. Other potential problem areas are likely to surface as the study progresses. Fiscal Year 1986 funds are being used for the system analysis of alternative measures which will lead to the selection of appropriate plans. Fiscal Year 1987 funds will be used for plan formulation on the Los Angeles County Drainage Area system, including the analysis of feasible alternative measures for flood damage prevention. Funds will also be used to initiate studies of the feasibility of interrelating water supply conservation, transportation, sediment management, recreation, and

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

b. Flood Damage Prevention Studies: California, Los Angeles County Drainage Area - Review (Cont)

environmental enhancement to flood control aspects of the Los Angeles County Drainage Area system. The study cost estimate increased $990,000 since last presented to Congress. This increase includes $987,000 for additional technical studies and management and $30,000 for Federal salaries, partially offset by a decrease of $27,000 based on actual costs of the Hansen Dam interim completed in April 1985. Requirements for the Los Angeles County Drainage Area study increased as a result of identification of a greater flood threat potential on the Los Angeles River than originally anticipated, thus calling for a greater effort in alternative analysis, interior drainage impact analysis, and a more extensive public involvement program. The study report of the Division Engineer is scheduled for completion in September 1988.

Northern California Streams, Dry Creek	750,000	300,000	225,000	100,000	125,000

Dry Creek is located in Sacramento and Placer Counties in the southeast portion of the Sacramento Valley near the cities of Roseville, Rocklin, Loomis, Rio Linda, and Penryn. The 1985 population in the study area was estimated at 60,000. Population growth in the watershed is expected to increase significantly as the computer industry continues to expand near Roseville. The main flood problem stems from the rapid urbanization of the upper watershed which is causing a substantial increase in runoff. Locally built channels in the lower reach can no longer contain this increase. The storms of March 1983 inundated nearly 3,000 acres of developed land, particularly near Rio Linda and Roseville. This study is addressing urban and agricultural flood damage reduction, recreation, and fish and wildlife enhancement. Based on results of reconnaissance phase studies, flood control on Dry Creek and reduction of damage to flood plain development will most likely be accomplished by various combinations of levee and channel improvements as well as non-structural measures such as flood-proofing and zoning regulations. The reconnaissance study has specifically identified that a non-structural plan on lower Dry Creek and a channel plan within the city of Roseville are feasible. The study cost estimate has decreased $150,000 since last presented to Congress. The reduction reflects a more detailed estimate of work based on the completed reconnisance phase.

Fiscal Year 1984 funds were used to fully fund the reconnaissance phase at full Federal expense. The feasibility phase was initiated in Fiscal Year 1986 at Federal expense upon agreement by Sacramento and Placer Counties, the local sponsors, to cost share 50 percent of the feasibility phase after cost sharing is implemented. The effective date of implementation is 15 March 1986. The funds requested for Fiscal Year 1987 will be used to continue the Federal share of the feasibility phase of the study. The estimated cost of the feasibility phase is $750,000. A summary of study

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

b. Flood Damage Prevention Studies: California, Northern California Streams, Dry Creek (Cont)

cost sharing is as follows:

Total Estimated Study Cost	$1,050,000
Reconnaissance Phase (Federal)	300,000
Feasibility Phase (Federal)	450,000
Feasibility Phase (Non-Federal)	300,000

The reconnaisance phase was completed in September 1985. The feasibility study is scheduled for completion in October 1988.

Sacramento-San Joaquin Delta	2,900,000	2,168,000	0	250,000	482,000

The study is located in Sacramento, Yolo, San Joaquin, Contra Costa, and Solano Counties and extends from the southern limits of the city of Sacramento to the city of Stockton and west to Suisun Bay. The study area consists of about 700,000 acres of land segregated into some 100 tracts and islands, bounded by interconnecting waterways and surrounded by 1,100 miles of levees which normally prevent the lands from being inundated by high tides or high river stages. There is inadequate flood protection for the various agricultural developments on islands and tracts. Approximately 100 levee failures have occurred in the Delta since 1900. About 40 of these failures have occurred since 1930, the most recent significant flooding occurred in December 1983 on Bradford Island. Lands within these levees are among the most productive agricultural lands in the State, and failures due to levee instability are becoming more prevalent. The major reasons for this are the subsidence of island interiors and poor foundation conditions of existing levees. Water quality degradation resulting mainly from saltwater intrusion, and lack of public recreation facilities, are also serious problems. Future State plans to transport northern California water through the Delta could have an effect on the existing configuration of Delta islands or on any plan to raise or strengthen levees protecting Delta islands. Consequently, it has been determined that development of a joint State water transfer plan and Corps flood control plan is desirable. Prior studies indicate that the most likely plan for flood protection consists of providing additional flood protection to 19 Delta islands, including recreational facilities such as fishing access sites, boat launching ramps, parking lots, boat docks, and trails. A wildlife management area is also being considered for development on Quimby, Mildred, Medford, Little Mandeville, and Rhode islands. Coordination with state and local agencies has continued and the goal at this time is to produce a combined Federal-State comprehensive plan for the Delta that will include water transfer, flood control, recreation, and fish and wildlife enhancement as

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

b. Flood Damage Prevention Studies: California, Sacramento-San Joaquin Delta (Cont)

project purposes. In July 1985, a coordinated planning effort was initiated between the California State Department of Water Resources, the Bureau of Reclamation, and the Corps. In December 1985, a joint study schedule was developed which indicated that the combined Federal-State comprehensive plan for the Delta will be completed in September 1990. The cost estimate has increased $1,037,000 since last presented to Congress (Fiscal Year 1983). Of this increase, $237,000 was necessary to evaluate additional islands as part of the flood control plan based on public comments and $800,000 was necessary to develop an integrated Federal-State comprehensive plan for the Delta. The funds requested for Fiscal Year 1987 will be used to coordinate State of California and Bureau of Reclamation technical studies, participate in a public involvement program, and evaluate joint Federal and non-Federal approaches to staged construction. The study report of the Division Engineer is scheduled for completion in September 1990.

San Francisco Bay Shoreline	4,280,000	2,125,000	520,000	840,000	795,000

San Francisco Bay has a water surface of about 420 square miles, excluding 130 square miles of marshlands, and a shoreline of 175 miles, excluding islands. This study is investigating tidal and related flood problems in low-lying areas along the Bay shoreline of San Mateo, Santa Clara, Alameda, Napa, Sonoma, and Solano Counties to the confluence of the Sacramento and San Joaquin Rivers. A substantial portion of the shoreline consists of levees which originally reclaimed portions of the Bay for agricultural and salt pond purposes. These levees now provide protection from tidal and related flooding for extensive residential, commercial, and industrial areas, valued at approximately $5.5 billion. However, in many areas the levees are low or structurally weak due to the method of construction, subsidence, or insdequate maintenance practices. The purpose of the study is to evaluate the condition of existing levees, their ability to protect the adjacent urban areas from future flooding, and to recommend improvements, if justified. The Southern Alameda-Santa Clara Counties interim is addressing flood problems in the highly developed industrial and residential areas of Santa Clara County and southern portion of Alameda County. The San Mateo-Northern Alameda Counties interim is addressing the remaining flood problems in the northern portion of Alameda County and along the shoreline of San Mateo County. The North Bay Counties interim will address flood problems in Sonoma, Napa, and Solano Counties. The final study report will summarize all the study activities and include investigation of the Federal interest in flood protection for the Suisun Marsh in central Solano County. A special study of the White Slough area of Solano County near Vallejo, California, identifying potential flood control alternatives, was completed in August 1985. The study cost estimate has increased $500,000 due to increases of $245,000 for the Southern Alameda-Santa Clara Counties interim as a result of recent tidal stage/frequency analysis indicating additional studies are required for increased flood control alternatives; $134,000 for the San Mateo-Northern Alameda Counties

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

b. Flood Damage Prevention Studies: California, San Francisco Bay Shoreline (Cont)

interim and $81,000 for the North Bay Counties interim due to reanalysis of remaining requirements; and $40,000 for Federal salary increases. In Fiscal Year 1986, funds are being used to complete the feasibility report for the Southern Alameda-Santa Clara Counties interim, and continuation of coordination with local sponsors for the San Mateo-Northern Alameda Counties interim. Fiscal Year 1987 funds will be used for plan selection and initiation of environmental impact studies for the San Mateo-Northern Alameda Counties interim and a survey of existing levee/shoreline conditions, flood frequency determination and floodplain delineation, and coordination with the U.S. Fish and Wildlife Service for the North Bay Counties interim. The study report of the Division Engineer is scheduled for completion in September 1990. Interim reports are scheduled for April 1987 for Southern Alameda and Santa Clara Counties; September 1988 for San Mateo and Northern Alameda Counties; and September 1989 for the North Bay Counties.

San Joaquin River Basin, Caliente Creek Stream Group	1,778,000	1,289,000	300,000	120,000	69,000

The study area is in Kern County and is located about 15 miles southeast of Bakersfield, California. Rainstorm flooding during February and March 1978 in the area caused damages of about $7.6 million. Flooding during March 1983 caused damages to crops and agricultural facilities, homes, highways, businesses, schools, as well as closing the main line railroad route used by both the Southern Pacific and Santa Fe Railroads. Damages below the mouth of Caliente Creek where it enters the valley were estimated at $20 million. A tentatively selected plan consisting of a flood detention reservoir and downstream channel conveyance has been identified and is being studied in detail under the feasibility phase.

Funds prior to Fiscal Year 1985 were used to fully fund the reconnaissance phase at full Federal expense. The feasibility phase was initiated in Fiscal Year 1985 at Federal expense upon agreement by the Kern County Water Agency, the local sponsor, to share 50 percent of the costs of the feasibility phase after cost sharing is implemented. The effective date of implementation is 15 March 1986. The Fiscal Year 1986 and 1987 funds will be used to continue the Federal share of the feasibility phase of the study. The estimated cost of the feasibility phase is $1,112,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$2,067,000
Reconnaissance Phase (Federal)	955,000
Feasibility Phase (Federal)	823,000
Feasibility Phase (Non-Federal)	289,000

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

b. Flood Damage Prevention Studies: California, San Joaquin River Basin, Caliente Creek Stream Group (Cont)

The reconnaissance phase was completed in February 1985. The feasibility study is scheduled for completion in February 1988.

San Joaquin River Basin, Kaweah River	715,000	0	285,000	100,000	330,000

The Kaweah River Basin is within the Tulare Lake Basin and located in the southeastern portion of the San Joaquin Valley between the cities of Fresno and Bakersfield. Kaweah River rises in the Sierra Nevada mountains and drains about 630 square miles into Terminus Lake. From Terminus Lake it passes near the city of Visalia, with a population of about 56,600, as it flows west into the Tulare Lakebed. Terminus Dam was completed in 1962 to provide flood control and irrigation water supply. However, significant flood damages, to communities and highly developed agricultural lands, along the Kaweah River have continued to occur. Flood releases from Terminus Dam have contributed to flood damages to agricultural lands in the Tulare Lakebed. The December 1966 rainflood exceeded the design capacity of Terminus Lake and floodflows passing downstream of the dam resulted in about $2.9 million in damages under conditions and prices at that time. These flows peaked at 23,000 cfs and inundated about 17,000 acres. The most recent flooding in 1983 caused extensive and widespread damages to properties in the Tulare Lakebed area where losses attributed to the Kaweah River were estimated at $17.6 million. Because of these significant floods, local interests have requested that the Corps of Engineers study the potential of enlarging Terminus Dam to provide greater flood protection and conservation storage in addition to other alternatives.

Fiscal Year 1986 funds are being used to fully fund the reconnaissance phase at full Federal expense. The funds requested for Fiscal Year 1987 will be used to initiate the cost shared feasibility phase of the study. The preliminary estimated cost of the feasibility phase is $860,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$1,145,000
Reconnaissance Phase (Federal)	285,000
Feasibility Phase (Federal)	430,000
Feasibility Phase (Non-Federal)	430,000

The reconnaissance phase is scheduled for completion in June 1987. The feasibility study is scheduled for completion in March 1990.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
b. Flood Damage Prevention Studies: California, (Cont)					
San Joaquin River Basin, Tule River	650,000	0	250,000	100,000	300,000

The Tule River Basin is within the 12,500 square mile Tulare Lake Basin and located in the southeastern portion of the San Joaquin Valley about 60 miles north of the city of Bakersfield. Tule River rises at an elevation of about 9,000 feet in the Sierra Nevada mountains and drains about 390 square miles into Success Lake. As Tule River flows from the lake, it drains onto the valley floor where the river divides into a number of distributary streams which flow 30 miles westerly through rich agricultural areas and the city of Porterville (population 21,400) into Tulare Lakebed. Success Lake provides flood control and irrigation water supply, however, the lake only provides complete flood protection to the city of Porterville from storms having a recurrence interval of once in 40 years or less. In December 1966, floodflows caused Success Lake to completely fill and excess floodflows passed over the spillway inundating about 25,000 acres downstream. Flood damages of about $1.5 million resulted to agricultural, industrial, utilities, and public facilities. In 1983 the lake again filled and excess floodflows caused damages of about $360,000 along Tule River. Flood damages further downstream in the Tulare Lakebed were extremely severe and widespread and damages attributed to the Tule River were nearly $7.5 million. In 1983, local interests pumped flood releases into the Friant-Kern Canal to disperse the water through the Kern River-California Aqueduct Intertie. The remainder entered Tulare Lake causing damages there. In March 1983, the Tulare County Board of Supervisors requested the Corps to study the potential of increasing flood storage of Success Lake for a higher degree of flood protection and possible increased conservation storage.

Fiscal Year 1986 funds are being used to fully fund the reconnaissance phase at full Federal expense. The funds requested for Fiscal Year 1987 will be used to initiate the feasibility phase of the study. The preliminary estimated cost of the feasibility phase is $800,000, which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$1,050,000
Reconnaissance Phase (Federal)	250,000
Feasibility Phase (Federal)	400,000
Feasibility Phase (Non-Federal)	400,000

The reconnaissance phase is scheduled for completion in June 1987. The feasibility study is scheduled for completion in September 1989.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
b. Flood Damage Prevention Studies: California, (Cont)					
Santa Ana River and Orange County	9,500,000	7,127,000	650,000	00,000	1,123,000

The study area, one of the fastest growing regions in the nation, is located in Orange, S a Bernardino, and Riverside Counties, adjacent to metropolitan Los Angeles. Population in the basin has increased fr m 1.3 million in 1960 to over 3.9 million in 1985, and is expected to increase to 5.6 million by the year 2000. Rapid urbanization of many areas of the basin is increasing the number of people threatened by floods and, at the same time, is generating larger runoff from developed areas. Flooding in January and February 1969 caused $88 million in damages ($324 million at 1985 prices), and flooding in February and March 1980 caused $40 million ($57 million at 1985 prices). The need for flood control has increased rapidly with population growth in the last decade, and the associated need to develop water sources is critical as southern California will gradually lose much of its Colorado River allocation over the next five years. This study addresses some of the most serious urban flooding problems in California, as well as increasingly critical water supply problems in the developing Santa Ana River Basin. The study currently includes two interim studies and a final report. An interim study covering the upper Santa Ana River Basin above Prado Dam is considering channels and debris basins on the San Jacinto River, San Timoteo and Temescal Creeks and their tributaries in San Bernardino and Riverside Counties. Flood threats being analyzed include those to the cities of Yucaipa, Redlands, Loma Linda, Beaumont, Hemet, San Jacinto, and Corona, with a total population of about 1.7 million. The Coyote Creek interim study is considering plans of improvement on streams in heavily urbanized Orange County, including those which threaten the communities of Fullerton, Anaheim, Huntington Beach, Fountain Valley and portions of Costa Mesa and Newport Beach. On 1 March 1983, a major storm caused extensive flooding within the city of Huntington Beach and its surrounding communities. As a result, about 5,000 people were evacuated from their homes, and approximately $15 million in property damage occurred. The final report will consider levees and channels on all other streams in Orange, San Bernardino, and Riverside Counties within the basin, not covered in the interim studies. Problems in the cities of Chino, Fontana, Rialto, San Bernardino, Highlands, San Juan Capistrano, and San Clemente will be addressed. At the request of the local sponsor, Riverside County, Lake Elsinore studies will proceed under the Continuing Authorities Program. Fiscal Year 1986 funds are being used to continue technical studies on the Coyote Creek and East Garden Grove-Wintersburg channels; complete detailed studies on Talbert and Huntington Beach channels; complete the San Timoteo interim; and initiate studies on Del Rosa Creek for the Final Report. In Fiscal Year 1987, funds will be used to continue study efforts on the Coyote Creek interim and Del Rosa Creek for the Final Report. The study report of the Division Engineer is scheduled for completion in December 1990. Interim reports are scheduled for March 1987 for San Timoteo and Tributaries and September 1989 for Coyote Creek.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
b. Flood Damage Prevention Studies: (Cont)					
Nevada					
Las Vegas Wash and Tributaries	1,652,000	500,000	445,000	320,000	387,000

The study area is located in southern Nevada and encompasses the cities of Las Vegas, North Las Vegas, Henderson, and portions of Clark County. Population growth in the Las Vegas Valley, from 94,000 in 1959 to over 520,000 in 1985, has increased the potential and severity of urban flood damages as development has taken place along the following watercourses: Las Vegas Wash, Las Vegas Range Wash, Las Vegas Creek (Washington Street Channel), Flamingo Wash, Tropicana Wash, Duck Creek, and the Henderson area. A 1975 flood caused $5 million in damages, $9.3 million at current prices. Two floods occurred in the Las Vegas area in August 1983 and caused extensive damages, estimated at $1 million. The severity of the July and August 1984 flooding and associated damages, estimated at $6 million, resulted in a Presidential disaster declaration for Clark County, including the Las Vegas Valley, in September 1984. Clark County also passed an emergency $15 million bond issue to deal with the flooding problem. Reconnaissance phase studies identified a justifiable plan for flood control, including diversion and detention structures along Las Vegas Creek and Flamingo and Tropicana Washes. These studies also indicated limited depth of flooding along Las Vegas Wash, Las Vegas Range Wash, and in the Henderson area. Subsequently, recent floods indicate a more severe flood problem exists in the area thought to be subject to only limited flooding, and the severity of this problem will be reassessed during the feasibility phase. The total study cost estimate increased $780,000 since last presented to Congress, $740,000 due to a more realistic estimate of study requirements based on the results of the reconnaissance phase and $40,000 for Federal salary increases.

Fiscal Year 1984 funds were used to fully fund the reconnaissance phase at full Federal expense. The feasibility phase was initiated in Fiscal Year 1985 at Federal expense upon agreement by the Clark County Flood Control District, the local sponsor, to share 50 percent of the costs of the feasibility phase after cost sharing is implemented. The effective date of implementation is 15 March 1986. Fiscal Year 1986 funds are being used to continue the Federal share of feasibility studies of improvements along Las Vegas Creek and Flamingo and Tropicana Washes, and to complete the Federal share of the reassessment of the severity of flood problems along Las Vegas Wash, Las Vegas Range Wash, and the Henderson area. Fiscal Year 1987 funds will be used to continue the Federal share of the feasibility phase of

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

b. Flood Damage Prevention Studies: Nevada, Las Vegas Wash and Tributaries (Cont)

the study. The estimated cost of the feasibility phase is $2,180,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$2,630,000
Reconnaissance Phase (Federal)	450,000
Feasibility Phase (Federal)	1,202,000
Feasibility Phase (Non-Federal)	978,000

The reconnaissance phase was completed in July 1985. The feasibility study is scheduled for completion in September 1989.

Utah

Great Salt Lake	1,250,000	0	500,000	150,000	600,000

The study area is located northwest of Salt Lake City, Utah. The Great Salt Lake, a landlocked lake with no outlet, is the largest lake west of the Mississippi River, covering about 2,000 square miles and containing about 20 million acre-feet. It collects runoff from a 26,875 square mile drainage area. The Great Salt Lake reached a peak elevation of 4,209.95 feet in May 1985, which is the highest the lake has been since 1877. This high stage is a result of above normal precipitation over the drainage basin since 1981. If above normal precipitation persists, the lake elevation could continue upward and increase flood damages. Flood damages adjacent to the lake were in the $100 million range in both 1984 and 1985. Potential damages have been estimated at about $850 million for a lake elevation of 4,212 feet and $2.3 billion for an elevation of 4,217 feet. The purpose of this study is to investigate flooding and related water resource problems adjacent to the lake and develop a plan for alleviating such problems. The study will determine if a Federal interest exists in resolving problems around the lake with emphasis on Bear River, Rose Park, Jordan River, the lake shore west of Corinne and Bountiful cities, and areas to be affected by a potential west desert pumping measure. The State of Utah has requested the Corps of Engineers to participate in implementing flood control measures to alleviate future damages associated with Great Salt Lake. The plans under consideration by the State of Utah and local governments include dikes around the perimeter of the lake to protect public facilities up to a lake elevation of 4,212 feet, management measures to preclude the lake from exceeding elevation 4,212 feet, alternative dike locations for protection against lake elevations in excess of 4,212 feet and alternative storage on the Bear River and adjacent to the lake, to reduce inflow during periods when the lake threatens to surpass the 4,212 foot level.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

b. Flood Damage Prevention Studies: Utah, Great Salt Lake (Cont)

In Fiscal Year 1986 funds provided by the Fiscal Year 1985 Supplemental Appropriation Act are being used to fully fund the reconnaissance phase at full Federal expense. The funds requested for Fiscal Year 1987 will be used to initiate the feasibility phase of the study. The preliminary estimated cost of the feasibility phase is $1,500,000 which is to be shared on a 50-50 percent basis by Federal and non-Federal interests. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$2,000,000
Reconnaissance Phase (Federal)	500,000
Feasibility Phase (Federal)	750,000
Feasibility Phase (Non-Federal)	750,000

The reconnaissance phase is scheduled for completion in March 1987. The feasibility study is scheduled for completion in September 1989.

Jordan River Basin	2,670,000	2,120,000	225,000	200,000	125,000

The study area extends about 70 miles from Great Salt Lake to Utah Lake and tributaries, and includes the Salt Lake City metropolitan area. The study area encompasses the Jordan River Basin of approximately 3,800 square miles, covering all of Salt Lake and Utah Counties and portions of Wasatch, Carbon, Sanpete and Juab Counties. The population of the overall study area is estimated to be 1,020,000, which is 60 percent of the population of Utah. The population of Salt Lake County increased from 383,000 in 1960 to about 716,000 in 1985, and is expected to increase to 900,000 by year 2000. Rapid urban growth in the basin, particularly in the Salt Lake County portion, has produced increased needs for flood control and conservation of water for municipal, industrial, and agricultural water supply, recreation, and fish and wildlife uses. Flood problems continue to intensify due to the increased runoff associated with the rapid urbanization of agricultural and undeveloped land, and the construction of storm drainage facilities discharging into natural streams. In 1982 floods occurred in May, July and September. The September flood was the most serious and caused an estimated $4.5 million in damages. Since September 1982, flooding has been a continual problem at Utah Lake, the origin of the Jordan River which flows through Salt Lake County. Utah Lake peaked at 4.93 feet above normal flood stage in June 1983 and at 5.43 feet in June 1984. In 1983 and 1984 snowmelt runoff in the basin approached 100 year flood levels. The snowmelt runoff of 1983 caused damage throughout the State totaling $630 million. Of this total $410 million occurred in the Jordan River Basin. Flood damages exceeded $40 million in Salt

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

b. Flood damage Prevention Studies: Utah, Jordan River Basin (Cont)

Lake County exclusive of damages in the Great Salt Lake area in 1983. Flood damages included $5.4 million associated with the Upper and Lower Jordan Rivers, and Surplus Canal; $10.8 million on Big and Little Cottonwood Creeks; and $5.5 million on Mill Creek. These figures included damages and flood fighting and restoration. As a result of the 1983 floods, 22 of 29 Utah counties, including all counties within Jordan River Basin, qualified for disaster relief. Again in 1984 statewide damages were substantial and 12 Utah counties were again declared disaster areas including all counties within Jordan River Basin. Damages though widespread were substantially reduced because of massive flood fight efforts by Federal and local government agencies and by private citizens. Primary tributaries covered under the Upper Jordan River interim study are Mill Creek, Big Cottonwood Creek, Little Cottonwood Creek, and Jordan River. Due to flood damages in 1983 local interests are making improvements on Big Cottonwood Creek which were part of the preliminary project plan of improvement. Therefore, Federal participation will focus solely on the Mill Creek plan of improvement which includes a combination of diversion facilities and channel improvement. Technical information is being provided to the State of Utah and local interests on Jordan River, Little Cottonwood and Big Cottonwood Creeks. The comprehensive portion of the study is considering flood problems at additional critical urban centers, such as American Fork, Provo, Spanish Fork and Springville. Fiscal Year 1986 funds are being used to complete the final report on Upper Jordan and to continue technical investigations on the comprehensive study. Fiscal Year 1986 and 1987 funds will be used to continue investigation of flood problems at critical urban centers; to continue flood control management studies at Utah Lake; to consider possibility of channel clearance on Jordan River between Utah Lake and Jordan Narrows, a distance of 10 miles; and to complete the final report. The study report of the Division Engineer is scheduled for completion in March 1988. An interim report for Upper Jordan River is scheduled for August 1986.

TOTAL FLOOD DAMAGE PREVENTION STUDIES	41,378,000	27,157,000	4,675,000	4,329,000	5,217,000

c. Shoreline Protection Studies: None

d. Special Studies: The amount of $1,000,000 is requested for the continuation of one study during Fiscal Year 1987.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
d. Special Studies: (Cont)					
California					
Coast of California, Storm and Tidal Waves	7,740,000	2,920,000	1,335,000	1,000,000	2,485,000

The study is investigating natural conditions along California's coast and the effect of these conditions on man's activities in the coastal environment in an effort to improve coastal planning and engineering, reduce maintenance dredging and navigation delays, and alleviate coastal flooding and erosion in urban areas. Many California harbors have wave-induced navigation problems and/or continuing high maintenance costs as a result of shoaling. Heavily developed urban areas contribute to the problems of coastal erosion by diminishing the flow of sediments to the coast. In order to provide more efficient plans, precise and reliable determinations of the impacts of man's actions on our shores are necessary. This study will: a) document long-term shoreline changes; b) identify, quantify, and interpret the processes responsible for those changes; c) provide data on the coastal geomorphology as it pertains to sediment dynamics, shoreline changes, establishment of predictive techniques, and coastal littoral sediment movements; and d) apply techniques for quantifying coastal changes due to natural forces and human-induced modifications on a regional scale, in order to provide technical information and a framework which will serve as a basis for sound coastal planning decisions related to the construction and maintenance of harbors, beach protection and nourishment, and other coastal works. This study will measure ocean wave energy and direction, determine the amount of sand present in coastal areas and identify beach and shoreline changes that are occurring together with their causes, determine sand supply needs caused by damaging coastal storms, and measure other ocean and shoreline processes that affect the land-ocean interface. The study will provide a comprehensive body of information on which to base plan formulation, design, operation and maintenance, and monitoring of coastal and urban flood protection measures. In Fiscal Year 1986, funds are being used to complete regional plans of study for the entire coastline, which include the determination of major data needs in northern littoral cells and identification of methods, equipment, and location for future data collection. Funds are also being used in the San Diego Region to continue collection of wave data, geological study of beach sediment and submarine canyons, and hydrographic surveys for beach and near-shore profiles; initiate collection of bluff sediment, analysis of bluff erosion, river sediment discharge, wave transformation and regional sediment budgets; investigate near-shore sand supply and rock outcroppings; aerial photography; expand public involvement programs; and prepare technical and public reports. Fiscal Year 1987 funds will be used to continue the San Diego Region data collection activities and the historical and data analysis tasks; complete the historic river sediment discharge and bluff erosion analysis; and calibrate wave transformation models. Completion of the San Diego Region's data collection phase is scheduled for September 1988, with data analysis scheduled for completion in

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

d. Special Studies: California, Coast of California, Storm and Tidal Waves (Cont)

September 1989. The study report of the Division Engineer is scheduled for completion in September 1991.

TOTAL SPECIAL STUDIES	7,740,000	2,920,000	1,335,000	1,000,000	2,485,000

e. Comprehensive Studies: None

f. Project Review Studies: None

TOTAL SURVEYS - CONTINUING	49,753,000	30,327,000	6,110,000	5,504,000	7,812,000

3. SURVEYS - CONTINUATION OF PLANNING AND ENGINEERING STUDIES:

a. Navigation Studies: The amount of $415,000 is requested for the completion of one study during Fiscal Year 1987.

California

Oakland Inner Harbor 2/	820,000	25,000	380,000	415,000	0

The project, a segment of Oakland Harbor, is located in the city of Oakland, Alameda County, on the eastern shore of central San Francisco Bay, separating the cities of Oakland and Alameda. The proposed plan of improvement consists of deepening the existing 4.5 miles of the inner harbor channel from 35 feet to 42 feet; entrance channel widening from 800 feet to 1,175 feet; widening of the central harbor from 600 to 900 feet; a 42 foot deep, 1,200 foot diameter turning basin; and provide a maneuvering area at the eastern corner of the Charles P. Howard terminal. The Port of Oakland services about 85 percent of all general cargo moving through the Golden Gate. About 95 percent of the cargo is containerized. The growth of vessel traffic and increasing size of containerships have rendered the existing Federal navigation channel serving Oakland Inner Harbor inadequate for efficient shipping operations and vessel safety. Cargo movement by larger vessels is hampered by the need to wait for high tides to avoid grounding hazards

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

a. Navigation Studies: California, Oakland Inner Harbor (Cont)

and by one-way traffic required to avoid collisions. Current total annual tonnage handled by this project segment amounts to about 2.5 million tons. The recently completed, 49 acre Charles P. Howard terminal, near the upper end of the channel, is considered to be the state-of-the-art containership terminal. The proposed plan of improvement would provide full development of the Inner Harbor, avoid delays, allow safe vessel traffic, and provide maximum efficiency of harbor operations. The October 1985 estimated project cost is $28.1 million. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and material disposal areas; and pay 25 percent of the costs allocated to deep draft navigation during construction, presently estimated at $7.0 million, pay an additional 10 percent of the costs allocated to deep draft navigation within a period of 30 years following completion if not offset by credit allowed by the Secretary of the Army. Annual benefits are estimated at $6.57 million (commercial navigation). The benefit-cost ratio is 2.2 to 1 at 8-5/8 percent. The study cost estimate increased $160,000 since last presented to Congress. This includes $140,000 for additional channel surveys to finalize design dimensions and for additional geotechnical explorations for possible groundwater impacts, and $20,000 due to Federal salary increases. Fiscal Year 1986 funds are being used to initiate ship model simulation studies, groundwater intrusion investigations, an endangered species survey, and report preparation. Fiscal Year 1987 funds will be used to complete ground water studies and to complete this Continuation of Planning and Engineering study in November 1987.

2/ Prior studies funded under the San Francisco Bay Area (In-Depth), California survey.

TOTAL NAVIGATION STUDIES	820,000	25,000	380,000	415,000	0

b. Flood Damage Prevention Studies: The amount of $1,250,000 is requested for the continuation of two studies during Fiscal Year 1987.

California

Cache Creek Basin 3/	2,300,000	870,000	500,000	500,000	330,000

The project area lies on the eastern slope of the Coast Range. Clear Lake unit is about 110 miles north of San

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

b. Flood Damage Prevention Studies: California, Cache Creek Basin (Cont)

Francisco and the Settling Basin Unit is about 15 miles northwest of Sacramento. The two proposed project units include: (1) for the upper basin at Clear Lake - widening and/or deepening 3.3 miles of the existing 5 mile long Clear Lake Outlet Channel to a capacity of 8,000 cubic feet per second, constructing a 1.1 mile long bypass channel around the highly developed area adjacent to the existing channel, and nonstructural measures; (2) for the lower basin at the mouth of Cache Creek enlarging the existing perimeter levees of the Cache Creek Settling Basin an average of 12 feet to provide 50 years of sediment storage capacity and enlarging the existing project levees from the settling basin mouth upstream to County Road 102, reconstructing and enlarging the existing Cobble Weir, degrading the existing training levees and rebuilding them adjacent to the western perimeter levee to allow utilization of the entire basin for sediment deposition, and nonstructural measures. These improvements would reduce sedimentation problems in the lower basin insuring the integrity of the Sacramento River Flood Control Project and would reduce downstream dredging requirements; in the upper basin the project would reduce the level of the 100-year flood stage on Clear Lake by 2.25 feet. The October 1985 estimated project cost is $28.2 million. Consistent with cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, and rights-of-way, presently estimated at $7,200,000; modify or relocate buildings, utilities, roads, and other facilities except railroads and railroad bridges, where necessary in the construction of the project, presently estimated at $1,700,000; pay 5 percent of the costs allocated to flood control, presently estimated at $1,400,000, and bear all costs of operation, maintenance, and replacement of flood control facilities presently estimated at $52,000 annually. The average annual benefits for the entire project are estimated at $5,030,000 ($4,335,000 flood damage reduction, $476,000 reduced dredging; and $219,000 employment). The benefit-cost ratio is 1.9 to 1 at 8-5/8 percent. Fiscal Year 1986 funds are being used to initiate and complete surveys and geotechnical studies at the Clear Lake Outlet Channel in an effort to review and evaluate alternatives to the current bypass plan and complete detailed engineering studies of the Cache Creek Settling Basin. Fiscal Year 1987 funds will be used to complete the review and evaluation of alternatives to the proposed bypass plan, analyze sedimentation and erosion findings, perform hydraulic design studies, and initiate economic, environmental, and operational stuuies for the Clear Lake Outlet Channel. Continuation of Planning and Engineering studies for the Settling Basin Unit are scheduled for completion in September 1986 and Clear Lake Unit in September 1988.

1/ Prior studies funded under the Northern California Streams, California survey.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
b. Flood Damage Prevention Studies: California, (Cont)					
Guadalupe River	1,500,000	0	265,000	750,000	485,000

The proposed flood control project is located in the downtown area of San Jose in Santa Clara County, California. The 1985 population for the city of San Jose was estimated at 697,000. The plan of improvements provide 100-year flood protection and includes the widening and deepening of one or both sides of the Guadalupe River and the construction of an underground channel bypass conduit. The proposed plan would provide a high degree of flood protection to downtown San Jose, including approximately 550 commercial businesses and 2,400 private residences, 4 major traffic arteries, and the San Jose International Airport, and would preserve, to the greatest degree possible, the existing riparian vegetation along Guadalupe River. The proposed project will also enhance the redevelopment potential of the downtown San Jose area. Flood-producing storms have occurred thirteen times since 1945, the most recent in 1982 and 1983. The storm of record occurred in December 1955, inundating 8,300 acres and causing approximately $1,300,000 in damages in the Guadalupe River drainage basin. If such an event were to occur today with current conditions and prices, damages would amount to nearly $14,000,000. The October 1985 estimated project cost is $43.9 million. Consistent with cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, and rights-of-way, presently estimated at $11,500,000; modify or relocate buildings, utilities, roads, and other facilities except railroads and railroad bridges, where necessary in the construction of the project, presently estimated at $13,000,000; pay five percent of the costs allocated to flood control, presently estimated at $1,700,000, and bear all costs of operation, maintenance, and replacement of flood control facilities presently estimated at $220,000 annually. The average annual benefits for the project are estimated at $5,900,000 ($4,690,000 flood damage reduction; and $1,210,000 for local redevelopment). The benefit-cost ratio is 1.3 to 1 at 8-5/8 percent. Fiscal Year 1986 funds will be used to prepare a plan of study, initiate topographic surveys and mapping, and geotechnical explorations. Fiscal Year 1987 funds will be used to complete surveys and mapping, geotechnical explorations, and initiate economic, environmental, cultural resources, and channel design studies. This Continuation of Planning and Engineering study is scheduled for completion in June 1988.

TOTAL FLOOD DAMAGE PREVENTION STUDIES	3,800,000	870,000	965,000	1,250,000	815,000

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$
c. Shoreline Protection Studies: None					
d. Special Studies: None					
e. Comprehensive Studies: None					
f. Project Review Studies: None					
TOTAL SURVEYS - CONTINUATION OF PLANNING AND ENGINEERING STUDIES	4,620,000	895,000	1,245,000	1,665,000	815,000
TOTAL SURVEYS	54,633,000	31,222,000	7,355,000	7,429,000	8,627,000
4. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - NEW: None					
5. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - CONTINUING: None					
6. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - CONTINUATION OF PLANNING AND ENGINEERING STUDIES:					
a. Navigation: None					
b. Flood Damage Prevention: The amount of $3,500,000 is requested for continuation of one study in Fiscal Year 1987.					
Santa Ana River 4/	17,300,000	9,025,000	4,000,000	3,500,000	775,000

The proposed project is located along a 75-mile reach of the Santa Ana River in Orange, Riverside, and San Bernardino Counties adjoining metropolitan Los Angeles, California. A severe flood threat exists within Orange County downstream of Prado Reservoir, which could cause damages in excess of $13 billion and could endanger and disrupt the lives of over 2 million people. Damages upstream of Prado Reservoir could exceed $450 million. The plan currently recommended

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
	$	$	$	$	$

b. Flood Damage Prevention: California, Santa Ana River (Cont)

to Congress provides for 30 miles of flood plain management of the standard project flood overflow area between the Mentone damsite and the existing Prado Reservoir; acquisition of 1,500 acres of post-project flood plain and bank stabilization in the Santa Ana Canyon; enlargement of Prado Dam to increase reservoir storage capacity from 195,000 acre-feet to 357,000 acre-feet; modification of 3.1 miles of channel along Oak Street Drain in Corona to provide 100-year level of protection; construction of a detention basin and channel modification along Santiago Creek; channel improvements along 23 miles of the river from Prado Dam to the Pacific Ocean; and at the mouth of the river, purchase of 8 acres of salt marsh for mitigation of project effects and 84 acres for preservation of endangered species. The October 1985 estimated project cost is $783 million. Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and material disposal areas, presently estimated at $29 million; modify or relocate buildings, utilities, roads, and other facilities, except railroads and railroad bridges, where necessary in the construction of the project, presently estimated at $48 million; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $13 million, and bear all costs of operation, maintenance, and replacement of recreation facilities, presently estimated at $900,000 annually; make a cash contribution, presently estimated at $37 million, the amount required to bring the non-Federal share of costs allocated to flood control channels to 25 percent; and 35 percent of the costs allocated to the flood control reservoir, presently estimated at $105 million, and bear all costs of operation, maintenance, and replacement of flood control channel facilities presently estimated at $2 million annually; pay 35 percent of the separable and joint costs allocated to fish and wildlife enhancement, presently estimated at $5.5 million annually. Annual benefits are estimated at $158 million ($153 million urban flood control; $1 million rural flood control; and $4 million recreation). The benefit-cost ratio is 2.1 to 1 at 8-5/8 percent. Fiscal Year 1986 funds are being used to continue environmental, economic, hydrologic and hydraulic, geotechnical and real estate studies for Prado Dam and downstream. Funds are also being used to complete a report for upstream flood storage sites as an alternative to Mentone Dam. In Fiscal Year 1987, funds will be used to complete hydrologic and hydraulic, geotechnical and real estate studies and continue environmental and economic studies for Prado Dam and downstream. This Continuation of Planning and Engineering study is scheduled for completion in August 1988.

A/ Prior studies funded under Santa Ana River, California (Phase I), authorized by the Water Resources Development Act of 1976 (Section 109), and the Santa Ana River and Orange County, California survey.

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Study	Total Estimated Federal Cost $	Allocation Prior to FY 1986 $	Allocation FY 1986 $	Tentative Allocation FY 1987 $	Additional to Complete After FY 1987 $
TOTAL FLOOD DAMAGE PREVENTION STUDIES	17,300,000	9,025,000	4,000,000	3,500,000	775,000
c. Shoreline Protection: None					
d. Multiple-Purpose Power: None					
TOTAL PHASE I STAGE OF CONTINUING ADVANCE ENGINEERING AND DESIGN - CONTINUATION OF PLANNING AND ENGINEERING	17,300,000	9,025,000	4,000,000	3,500,000	775,000
GRAND TOTAL SURVEYS AND PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN	71,933,000	40,247,000	11,355,000	10,929,000	9,402,000

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APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Oakland Outer Harbor, California (New)

LOCATION: Oakland Outer Harbor, a segment of Oakland Harbor is located in the city of Oakland, California, on the eastern shore of central San Francisco Bay immediately south of San Francisco - Oakland Bay Bridge.

AUTHORIZATION: Not yet authorized; implementation is contingent upon Congressional authorization of construction.

BENEFIT-COST RATIO: The benefit-cost ratio is 3.0 to 1 at 8-5/8 percent. The benefit-cost ratio was based on the project's fair share of incremental benefits and costs associated with this modification of the previous project.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. (CofE) Cost
Estimated Federal Cost		$14,920,000	
Corps of Engineers	$14,900,000		
U.S. Coast Guard	20,000		
Estimated Non-Federal Cost		13,200,000	
Cash Contribution	4,900,000		
Other Cost	8,300,000		
Total Estimated Project Cost		$28,120,000	
Allocations to 30 September 1985		$ 10,000	
Conference Allowance for FY 1986		155,000	
Allocations for FY 1986		230,000 1/	
Allocations to Date		240,000	2
Allocation Requested for FY 1987		$2,500,000 2/	18
Scheduled Balance to Complete After FY 1987		12,160,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Channels	Not Started	Sep 1988
Entire Project		Sep 1988

1/ Reflects $75,000 pending transfer to the project.

2/ Obligation and expenditure of budgeted funds for construction of this project are contingent upon enactment of legislation enabling recovery of all or part of the costs to be expended by the project sponsor and the Federal Government, in accordance with the agreement between the Administration and the Senate Majority Leadership.

Division: South Pacific

District: San Francisco

Region: California - South Pacific
Oakland Outer Harbor, California

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PHYSICAL DATA

Channels:

Deepening the 3.4 mile Outer Harbor Channel to 42 feet. Widen the entrance channel to 1,100 feet, and the Outer Harbor dogleg to 800 feet.

Turning Basin:

Relocate turning basin 3,000 feet westward, deepen to 42 feet, and widen to 1,800 feet.

JUSTIFICATION: The growth of vessel traffic and increasing size of containerships have rendered the existing Federal navigation channel serving Oakland Outer Harbor inadequate for efficient shipping operations and vessel safety. Cargo movement in large vessels is hampered by the need to wait for high tides to avoid grounding and by one-way traffic required to avoid collisions. Overall, the value of import and export, domestic and foreign cargoes handled by the Port of Oakland now amounts to $10 billion annually. Outer Harbor facilities, specializing in container traffic, constitute a major part of this value. It is estimated that 66 percent of the containerized cargo that passes through the Port of Oakland is handled by Oakland Outer Harbor. Overall commerce at the Outer Harbor increased from 2.8 million tons in 1974 to 5.2 million tons in 1984, an increase of 86 percent. Containership cargo handled at the harbor was 4.7 million tons in 1984, and is projected to reach port capacity of 6.7 million tons by 2005. Four generations of containerships have evolved since their introduction in the 1950's. Vessel lengths and widths have increased from 450 feet and 90 feet to greater than 900 feet and 105 feet, with some having drafts in excess of 34 feet. Construction of the project would provide full development of the harbor potential and maximum utilization of its container cargo facilities. Average annual benefits, all navigation, are estimated to be $8,120,000, based on 1 October 1985 prices.

FISCAL YEAR 1987: The requested amount of $2,500,000 will be applied as follows:

Initiate Harbor Entrance Dredging	$2,100,000
Engineering and Design	210,000
Supervision and Administration	190,000
Total	$2,500,000

NON-FEDERAL COST: Consistent with cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and material disposal areas; modify Bay Area Rapid Transbay Tube, where necessary in the construction of the project, presently estimated at $5,900,000; provide and maintain when and as required without cost to the United States, depths in berthing areas and local access channels serving the terminals commensurate with depths provided in the related project areas, presently estimated at $2,400,000; and pay 25 percent of the costs allocated to deep draft navigation during construction, presently estimated at $4,900,000.

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STATUS OF LOCAL COOPERATION: The Board of Port Commissioners of the Port of Oakland adopted a Resolution of Intent to provide local assurances for the proposed project on 14 July 1982. By letter dated 3 October 1985, the Port reaffirmed intent to provide necessary local assurances consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership. In conformance with Section 221, Flood Control Act of 1970 (Public Law 91-611) a written agreement will be obtained from the Port of Oakland prior to commencement of construction.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $14,900,000 is the initial estimate submitted to Congress. This estimate includes $900,000 for estimated inflation allowance from 1 October 1985 through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement was submitted to EPA on 27 February 1981. A Supplemental Environmental Impact Statement is being prepared to address a change in disposal method and is scheduled to be submitted to EPA in December 1986.

A Section 404(b)(1) evaluation was submitted on 16 February 1983 to the State of California Regional Water Quality Control Board. The Supplemental Environmental Impact Statement scheduled to be submitted to EPA in December 1986 will contain an updated Section 404(b)(1) evaluation, due to a change in disposal method.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1982.

The U.S. Fish and Wildlife Service and the Environmental Protection Agency have expressed concern about the estimated quantity of 4.9 million cubic yards of dredged material to be disposed in San Francisco Bay south of Alcatraz Island. These concerns are being addressed in the Supplemental Environmental Impact Statement.

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HISTORIC CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: San Francisco

Project: Oakland Outer Harbor, California

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Changes (4)	Current (5)
Federal Cost (Price Level)	14,900 1/		N/A		14,900 1/

Reason for Change

a. Price Escalation
b. Design Changes
c. Additional Functions Added Under General Authorization
d. Authorized Modification
e. Post-Contract Award and Other Estimating Adjustments
f. Schedule Changes
g. Sundry
h. Real Estate

1/ Includes $900 allowance for estimated inflation from 1 October 1985 through the construction period.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEAR 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	CHANNELS	18,400,000			2,800,000	15,600,000
2	ENGINEERING AND DESIGN	610,000		200,000	280,000	130,000
3	SUPERVISION AND ADMINISTRATION	790,000		40,000	220,000	530,000
4						
5	TOTAL COST (Fed Funds and					
6	Non-Fed Contrib)	19,800,000		240,000	3,300,000	16,260,000
7	Undelivered Orders (None)					
8	TOTAL OBLIGATIONS (Fed Funds and			240,000	3,300,000	16,260,000
9	Non-Fed Contrib)					
10						
11	FEDERAL FUNDS					
12	TOTAL COSTS	14,900,000		240,000	2,500,000	12,160,000
13	Undelivered Orders (None)					
14	TOTAL OBLIGATIONS				2,500,000	12,160,000
15						
16	NON-FEDERAL CONTRIBUTIONS					
17	TOTAL COST	4,900,000			800,000	4,100,000
18	Undelivered Orders (None)					
19	TOTAL OBLIGATIONS				800,000	4,100,000
20						
21	METHOD OF FINANCING					
22	FEDERAL FUNDS					
23	ALLOCATIONS		10,000	230,000 1/		
24	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			10,000		
25	TOTAL FUNDS AVAILABLE FOR OBLIGATION			240,000		
26	APPROPRIATION REQUIRED				2,500,000 2/	12,160,000
27						
28						
29						

EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SAN FRANCISCO | REGION: CALIF-SOUTH PACIFIC | BASIN: SAN FRANCISCO BAY | PROJECT: OAKLAND OUTER HARBOR, CALIFORNIA

4 FEB 1986 1468

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL | CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEAR 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	NON-FEDERAL COSTS					
2	CASH CONTRIBUTIONS	4,900,000			800,000	4,100,000
3	OTHER COSTS	8,300,000		300,000	6,500,000	1,500,000
4	LANDS AND DAMAGES	0				
5	RELOCATIONS	(5,900,000)		(300,000)	(5,600,000)	
6	OTHER (BERTHING AREAS)	(2,400,000)		(0)	(900,000)	(1,500,000)
7	TOTAL NON-FEDERAL COST	13,200,000		300,000	7,300,000	5,600,000
8						
9						
10						
11	1/ Reflects $75,000 pending transfer to the project.					
12	2/ Obligation and expenditure of budgeted funds for construction of this project are contingent upon enactment of					
13	legislation enabling recovery of all or part of the costs to be expended by the project sponsor and the Federal					
14	Government, in accordance with the agreement between the Administration and the Senate Majority Leadership.					
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EFFECTIVE DATE	DIVISION: SOUTH PACIFIC	REGION: CALIF-SOUTH PACIFIC	PROJECT: OAKLAND OUTER HARBOR, CALIFORNIA
1 JAN 86	DISTRICT: SAN FRANCISCO	BASIN: SAN FRANCISCO BAY	

4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Pajaro River, California (New)

LOCATION: The project is located in the Uvas-Carnadero and Llagas Creeks watersheds of the upper Pajaro River Basin in south Santa Clara County in the vicinity of the city of Gilroy about 75 miles south of San Francisco, California.

AUTHORIZATION: 1944 Flood Control Act

BENEFIT-COST RATIO: The benefit-cost ratio is 2.1 to 1 at 8-5/8 percent. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Federal Cost		$1,820,000	
Estimated Non-Federal Cost		4,020,000	
Cash Contribution	$ 360,000		
Other Costs	3,660,000		
Total Estimated Project Cost		$5,840,000	
Allocations to 30 September 1985		560,000	
Conference Allowance for FY 1986		0	
Allocation for FY 1986		0	
Allocations to Date		560,000	31
Allocation Requested for FY 1987		$ 500,000	58
Scheduled Balance to Complete After FY 1987		760,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Levees	Not Started	Sep 1988
Recreation Facilities		Sep 1988
Entire Project		Sep 1988

PHYSICAL DATA

Levee:

Height: 5 to 10 feet
Length: 2.2 miles

Recreation Facilities:

Biking Trail: 1.8 miles
Hiking Trail: 1.6 miles

Division: South Pacific

District: Sacramento

Region: California-South Pacific
Pajaro River, California

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JUSTIFICATION: The Uvas-Carnadaro Creek originates on Loma Prieta Peak in the Santa Cruz Mountains and flows generally southeast into the Pajaro River. The drainage area is approximately 90 square miles, including the city of Gilroy. The project will provide flood protection to about 4,300 acres of land in the city of Gilroy that is now subject to frequent and damaging flood inundations. The present value of improvements in the project flood plain is $271,000,000. Since 1960, the population of Gilroy has increased 247 percent, from 7,300 to 25,300 in 1985 and is projected to increase to 64,300 by the year 2033. The economy of the area is largely devoted to agriculture, food processing, cattle, and some light industrial/commercial activities. Since 1937, five significant damaging floods have occurred, including the flood of record (December 1955) which produced a peak discharge of 10,300 cubic feet per second. A breakdown of average annual benefits follows:

Benefits	Amount (1 October 1985)
Flood Control	$1,108,000
Recreation	62,000
	$1,170,000

FISCAL YEAR 1987: The requested amount of $500,000 will be applied as follows:

Initiate Uvas Creek Levee Construction	$ 425,000
Engineering and Design	50,000
Supervision and Administration	25,000
Total	$ 500,000

NON-FEDERAL COST: In accordance with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, and rights-of-way, presently estimated at $2,000,000 including $160,000 for recreation rights-of-way; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $1,660,000; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $80,000 and bear all costs of operation, maintenance, and replacement of recreation facilities, presently estimated at $13,500 annually; pay 5 percent of the costs allocated to flood control, presently estimated at $280,000 and bear all costs of operation, maintenance, and replacement of flood control facilities presently estimated at $19,500 annually. Local interests have also agreed to make all required payments and voluntary contributions concurrently with project construction.

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STATUS OF LOCAL COOPERATION: Support for the flood control aspects of the project was reaffirmed by the Santa Clara Valley Water District in a letter of 24 October 1985. By letter dated 4 November 1985, the City of Gilroy confirmed its intent to sign a contract for cost sharing and operation and maintenance for the recreation portion of the project. However, the project sponsor indicated that there should be further consideration of Federal reimbursement for one-half of the non-Federal costs in excess of Federal construction costs for flood control, in accordance with Section 3 of the Flood Control Act of 1936. In accordance with Section 221 of the Flood Control Act of 1970 (Public Law 91-611), a Local Cooperation Agreement for the project will be executed prior to initiation of construction.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $1,820,000 is a decrease of $970,000 from the latest estimate ($2,790,000) submitted to Congress. This change includes increases of $15,000 for adjustments in the estimated inflation allowance through the construction period; and $125,000 for Engineering and Design due to reanalysis of requirements for investigation of project induced flooding. These increases were offset by a decrease of $1,110,000 as a result of redistribution of project costs in accordance with cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement was submitted to EPA on 3 November 1982.

The provisions of Section 404 of the Clean Water Act were met by a Section (404)(b)(1) Evaluation dated July 1981, a Public Notice issued on 18 June 1981, a Certification from the State of California on 21 July 1981, and the District Engineer's signature on the Finding of Compliance on 16 September 1981.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1979.

1472

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: Sacramento

Project: Pajaro River, California

	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Changes (4)	Current (5)
Federal Cost (Price Level)	1,820 1/		N/A		1,820 1/

Reason for Change

a. Price Escalation
b. Design Changes
c. Additional Function Added Under General Authorization
d. Authorized Modification
e. Post-Contract Award and Other Estimating Adjustments
f. Schedule Changes
g. Sundry
h. Real Estate

1/ Includes $75 for estimated inflation from 1 October 1985 through the construction period.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	LEVEES	1,230,000			510,000	720,000
2	RECREATION	120,000				120,000
3	ENGINEERING AND DESIGN	660,000	500,000		60,000	100,000
4	SUPERVISION AND ADMINISTRATION	170,000	60,000		30,000	80,000
5						
6	TOTAL COST (Fed Funds and					
7	Non-Fed Contrib)	2,180,000	560,000		600,000	1,020,000
8	Undelivered Orders (None)					
9	TOTAL OBLIGATIONS (Fed Funds and					
10	Non-Fed Contrib)		560,000		600,000	1,020,000
11						
12	FEDERAL FUNDS					
13	TOTAL COST	1,820,000	560,000		500,000	760,000
14	Undelivered Orders (None)					
15	TOTAL OBLIGATIONS		560,000		500,000	760,000
16						
17	NON-FEDERAL CONTRIBUTIONS					
18	TOTAL COST	360,000			100,000	260,000
19	Undelivered Orders (None)					
20	TOTAL OBLIGATIONS				100,000	260,000
21						
22	METHOD OF FINANCING					
23	FEDERAL FUNDS					
24	ALLOCATIONS		560,000			
25	UNOBLIGATED CARRYOVER FROM PRIOR YEAR					
26	TOTAL FUNDS AVAILABLE FOR OBLIGATION					
27	APPROPRIATIONS REQUIRED				500,000	760,000
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33						

EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF-SOUTH PACIFIC | BASIN: SAN FRANCISCO BAY | PROJECT: PAJARO RIVER, CALIFORNIA

4 FEB 1986

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REPORTS CONTROL SYMBOL DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	NON-FEDERAL					
2	CASH CONTRIBUTIONS	360,000			100,000	260,000
3	OTHER COSTS	3,660,000			2,660,000	1,000,000
4	LANDS AND DAMAGES	(2,000,000)			(2,000,000)	(0)
5	RELOCATIONS	(1,660,000)			(660,000)	(1,000,000)
6	OTHER	(0)				
7	TOTAL NON-FEDERAL COST	4,020,000			2,760,000	1,260,000
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EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF-SOUTH PACIFIC | BASIN: SAN FRANCISCO BAY | PROJECT: PAJARO RIVER, CALIFORNIA

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Redbank and Fancher Creeks, California (New)

LOCATION: The project is located northeast and adjacent to the Fresno-Clovis Metropolitan Area in Fresno County, about 170 miles south of Sacramento, California.

AUTHORIZATION: Not yet authorized; implementation is contingent upon Congressional authorization of construction.

BENEFIT-COST RATIO: The benefit-cost ratio is 1.6 to 1 at 8-5/8 percent. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Federal Cost		$ 55,200,000	
Estimated Non-Federal Cost		18,300,000	
Cash Contribution	$ 6,100,000		
Other Costs	12,200,000		
Total Estimated Project Cost		$ 73,500,000	
Allocations to 30 September 1985		$ 30,000	
Conference Allowance for FY 1986		700,000	
Allocation for FY 1986		700,000	
Allocations to Date		$ 730,000	1
Allocation Requested for FY 1987		$ 2,000,000	5
Scheduled Balance to Complete After FY 1987		52,470,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Reservoirs	Not Started	Jan 1990
Dams		May 1990
Roads		Sep 1988
Channels		Sep 1989
Levees		Sep 1987
Cultural Resources		Jul 1987
Buildings, Grounds and Utilities		Sep 1989
Permanent Operating Equipment		Sep 1989
Entire Project		May 1990

Division: South Pacific

District: Sacramento

Region: California-South Pacific
Redbank and Fancher Creeks, California

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PHYSICAL DATA

Big Dry Creek Dam
Dam: Type - Random Fill
Max. Dam Height - 45.0 feet
Length - 4.8 miles

Spillway: Type - Ungated, concrete ogee spillway
Crest width - 550 feet
Capacity - 33,400 c.f.s.

Lake Capacity: Flood Control storage (gross pool) - 31,800 ac-ft

Outlet Works
Big Dry Creek
Capacity 150 c.f.s.
Little Dry Creek
Capacity 700 c.f.s.

Fancher Creek Dam
Dam: Type - Impervious Core and Random Fill
Max. Dam Height - 45.5 feet
Length - 3 miles

Spillway and Outlet Works:
Type - Combined ungated ogee spillway with ungated outlet works
Crest width - 60 feet
Capacity - 7,100 c.f.s.

Lake Capacity: Flood Control
Storage (gross pool) - 10,300 ac-ft

Redbank Creek Detention Basin
Basin: Type - Combination excavated and embankment contained
Max. Basin Depth - 7.1 feet
Max. Emb. Height - 3.0 feet

Basin Capacity: Flood Control
Storage - 940 ac-ft

Control Structure:
Buoyancy activated gates
Maximum outflow 200 c.f.s.

Pup Creek Detention Basin
Basin: Type - Combination excavated and embankment contained
Max. Basin Depth - 10.8 feet
Max. Emb. Height - 3.0 feet

Basin Capacity: Flood Control
Storage - 495 ac-ft

Outlet Works: Ungated
Maximum outflow at Gross pool - 25 c.f.s.

Alluvial Drain Detention Basin
Basin: Type - Completely excavated
Max. Basin Depth - 8.5 feet

Basin Capacity: Flood Control
Storage - 385 ac-ft

Outlet Works: Ungated
Maximum outflow at Gross Pool - 25 c.f.s.

JUSTIFICATION: Construction of this project will provide protection to lands and improvements in the Fresno-Clovis Area with a 1985 population of approximately 305,000. The present value of lands and improvements in the 37,900 acre overflow area subject to flood damages is about $3.1 billion. The flood of record occurred in 1969 inundating over 14,500 acres of agricultural, residential, commercial, industrial, and public properties and caused about $4.7 million in damages. A recurrence of that flood under current conditions would cause damages of about $16.7 million. Average annual benefits, all flood control, are estimated at $8,480,000, based on 1 October 1985 prices.

Redbank and Fancher Creeks, California

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FISCAL YEAR 1987: The requested amount of $2,000,000 will be applied as follows:

Big Dry Creek Dam	
Initiate and complete Big Dry Creek Siphon and Levee Modification	$ 630,000
Initiate and complete Cultural Resources Preservation	180,000
Fancher Creek Dam	
Initiate and complete Cultural Resources Preservation	205,000
Engineering and Design	885,000
Supervision and Administration	100,000
Total	$2,000,000

NON-FEDERAL COSTS: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, and rights-of-way presently estimated at $11,790,000; modify or relocate buildings, utilities, roads and other facilities, except railroads and railroad bridges, where necessary in the construction of the project, presently estimated at $410,000; pay at least 5 percent of the costs allocated to flood control, presently estimated at $3,660,000 and pay an additional $2,440,000, to bring the total non-Federal contribution to 25 percent of the flood control costs, and bear all costs of operation, maintenance, and replacement of flood control facilities presently estimated at $235,000 annually. The total local share of project first costs on this basis is $18,300,000.

STATUS OF LOCAL COOPERATION: The Fresno Metropolitan Flood Control District provided letters of intent dated 18 January 1977, 20 October 1978, and 16 May 1979 to furnish the local assurances required for the proposed flood control project. By letter dated 9 October 1985 the District reaffirmed intent to provide necessary local assurances consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership. The State of California in 1985 passed legislation to reimburse the Fresno Metropolitan Flood Control District for 75 percent of lands and easements and 90 percent of relocations cost. In conformance with Section 221, Flood Control Act of 1970, Public Law 91-611, a written agreement will be obtained from the Fresno Metropolitan Flood Control District prior to commencement of construction.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $55,200,000 is the initial estimate submitted to Congress. This estimate includes $9,100,000 for estimated inflation allowance from 1 October 1985 through the construction period.

1478

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STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement was submitted to EPA on 7 November 1980.

The provisions of Section 404 of the Clean Water Act have been met with the submission of the Final Environmental Impact Statement, including a Section 404(b)(1) evaluation, to Congress on 17 November 1983, and will require a subsequent appropriation or authorization action on this project by Congress.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1982.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: Sacramento

Project: Redbank and Fancher Creeks, California

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	55,200 1/		N/A		55,200 1/

Reason for Change
a. Price Escalation
b. Design Changes
c. Additional Function Added Under General Authorization
d. Authorized Modification
e. Post-Contract Award and Other Estimating Adjustments
f. Schedule Changes
g. Sundry
h. Real Estate

1/ Includes $9,100 allowance for estimated inflation from 1 October 1985 through the construction period.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	RESERVOIRS	525,000				525,000
2	DAMS	49,945,000				49,945,000
3	ROADS	60,000				60,000
4	CHANNELS & CANALS	360,000				360,000
5	LEVEES & FLOODWALLS	630,000			630,000	0
6	CUL RES PRESERVATION	385,000			385,000	0
7	BLDGS, GRNDS & UTIL	60,000				60,000
8	PERM OPER EQUIPMENT	290,000				290,000
9	ENGINEERING AND DESIGN	6,370,000		630,000	885,000	4,855,000
10	SUPERVISION AND ADMINISTRATION	2,675,000		100,000	100,000	2,475,000
11						
12	TOTAL COST (Fed Funds and					
13	Non-Fed Contrib)	61,300,000		730,000	2,000,000	58,570,000
14	Undelivered Orders (None)					
15	TOTAL OBLIGATIONS (Fed Funds and			730,000	2,000,000	58,570,000
16	Non-Fed Contrib)					
17						
18	FEDERAL FUNDS					
19	TOTAL COST	55,200,000		730,000	2,000,000	52,470,000
20	Undelivered Orders (None)					
21	TOTAL OBLIGATIONS			730,000	2,000,000	52,470,000
22						
23	NON-FEDERAL CONTRIBUTIONS					
24	TOTAL COST	6,100,000				6,100,000
25	Undelivered Orders (None)					
26	TOTAL OBLIGATIONS					6,100,000
27						
28						
29						
30						
31						
32						
33						

EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF-SOUTH PACIFIC | BASIN: SAN JOAQUIN | PROJECT: REDBANK AND FANCHER CREEKS, CALIFORNIA

4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	METHOD OF FINANCING					
2	FEDERAL FUNDS					
3	ALLOCATIONS		30,000	700,000		
4	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			30,000		
5	TOTAL FUNDS AVAILABLE FOR OBLIGATION			730,000		
6	APPROPRIATIONS REQUIRED				2,000,000	52,470,000
7						
8	NON-FEDERAL					
9	CASH CONTRIBUTIONS	6,100,000				6,100,000
10	OTHER COSTS	12,200,000			8,700,000	3,500,000
11	LANDS AND DAMAGES	(11,790,000)			(8,590,000)	(3,200,000)
12	RELOCATIONS	(410,000)			(110,000)	(300,000)
13	OTHER	(0)			(0)	(0)
14	TOTAL NON-FEDERAL COST	18,300,000			8,700,000	9,600,000
15						
16						
17						
18						
19						
20						
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EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF-SOUTH PACIFIC | BASIN: SAN JOAQUIN | PROJECT: REDBANK AND FANCHER CREEKS CALIFORNIA

4 FEB 1986

1459

APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Fisherman's Wharf Area, California (Continuing)

LOCATION: Fisherman's Wharf Area is located on San Francisco Bay on the northern waterfront of the City of San Francisco.

AUTHORIZATION: Further Continuing Appropriations Act 1984 (Public Law 98-151), 14 November 1983.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because the project is nearing completion. The benefit-cost ratio for the Fiscal Year for which Congress appropriated initial construction funds (FY 1984) was 1.2 to 1. The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Federal Cost		$ 8,900,000	
Estimated Non-Federal Cost		700,000	
Cash Contribution	$ 700,000		
Other Cost	0		
Total Estimated Project Cost			
Total Estimated Project Cost		$ 9,600,000	
Allocations to 30 September 1985		$ 3,350,000	
Conference Allowance for FY 1986		5,000,000	
Allocation for FY 1986		5,000,000	
Allocations to date		8,350,000	94
Allocation Requested for FY 1987		550,000	100
Scheduled Balance to Complete After FY 1987		0	
Unscheduled Balance to Complete After FY 1987		0	

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Breakwaters	20	Dec 1986
Recreation Facilities	0	Dec 1986
Entire Project	20	Dec 1986

PHYSICAL DATA

Breakwaters:

1,509 foot solid concrete sheetpile breakwater.

Two segmented breakwaters; one 150 feet long, and one 250 feet long.

Division: South Pacific

District: San Francisco

Region: California - South Pacific
Fisherman's Wharf Area, California

4 FEB 1986

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JUSTIFICATION: The Fisherman's Wharf Area is the historic center of commercial fishing activity in Northern California. The existing commercial fishing harbor has berths for 170 fishing vessels, which together with transient craft, accounted for landing of about 20 million pounds of fish in 1983. The harbor area is exposed to wave action from the open ocean, as well as from within San Francisco Bay, and is the most exposed small craft harbor in the San Francisco Bay Area. As a consequence of continual damages to boats, as well as serious problems in off-landing fish catches during rough weather, many boats which previously had been based at this harbor have left for more protected harbors. Loss of a viable fishing fleet at the harbor would seriously jeopardize the viability of land side tourist industries in the area, which currently is the second largest tourist attraction in California, with over 10 million visitors annually. The proposed plan of improvement will provide a protected harbor adequate to serve the existing fishing fleet, and provide for future expansion as vessels previously based in this area return. The project would also provide protection to the Federally owned historic vessel fleet which is a major attraction of the Golden Gate National Recreation Area. Average annual benefits are estimated as follows:

Benefits	Amount (1 October 1985)
Commercial Fishing	$ 940,000
Recreation	910,000
Historic Ship Protection	240,000
	$2,090,000

FISCAL YEAR 1987: The requested amount of $550,000 will complete the project and will be applied as follows:

Complete Breakwater Construction	$ 534,000
Complete Recreation Facilities	10,000
Engineering and Design	1,000
Supervision and Administration	5,000
Total	$ 550,000

NON-FEDERAL COST: In accordance with the project authorization local interests are required to provide lands, easements, and rights-of-way; relocate utilities, highways and roads, if necessary in the construction of the project; contribute 5 percent of the total first cost of the project estimated to be $540,000; pay one-half of the separable cost allocated to recreation, approximately $10,000; and pay one-half of the separable cost to protect the historic fleet, estimated at $150,000; and are also responsible for relocation of historic ships during construction; however, design studies to date have indicated that relocation of the historic ships will not be necessary. Local interests are also required to maintain recreation facilities upon completion of construction. The estimated annual cost for operation and maintenance of the recreation facilities is currently $4,000.

STATUS OF LOCAL COOPERATION: The local sponsor for the project is the City and County of San Francisco acting through the San Francisco Port Commission. By resolution dated 24 October 1984, the Port Commission agreed to assume the obligations of local cooperation. In conformance with Section 221, Flood Control Act of 1970, Public Law 91-611, a written agreement of unconditional compliance with all requirements for the project, including active recreation facilities, was obtained from the local sponsors and signed by the District Engineer on 26 November 1984.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $8,900,000 is a decrease of $2,800,000 from the latest estimate ($11,700,000) submitted to Congress. This change includes decreases of $285,000 for adjustments in the estimated inflation allowance through the construction period; $2,383,000 due to favorable bid and associated contingencies; $48,000 for Engineering and Design and $109,000 for Supervision and Administration due to reanalysis of remaining requirements. These decreases were partially offset by an increase of $25,000 for higher price levels.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement was submitted to EPA on 20 February 1981.

The provisions of Section 404 of the Clean Water Act do not apply, because the project does not involve the placement of fill material or discharge of dredged material into the waters of the United States.

OTHER INFORMATION: Funds to initiate construction were appropriated in FY 1984.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: San Francisco

Project: Fisherman's Wharf Area, California

	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Changes (4)	Current (5)
Federal Cost (Price Level)	6,300 1/ (Oct 83)		11,700 1/		8,900 1/2/
Reason for Change		(5,400) 1/		(-)(2,800) 2/	
a. Price Escalation		165		(-) 260	
b. Design Changes		(-)3,584			
c. Additional Function Added Under General Authorization					
d. Authorized Modification		9,044			
e. Post-Contract Award and Other Estimating Adjustment				(-) 2,540 3/	
f. Schedule Changes		(-)225			
g. Sundry					
h. Real Estate					

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes a reduction of $285 in the estimated inflation allowance through the construction period.
3/ Includes decreases of $1,363 for favorable bid; $1,020 for reduced contingency allowance; $48 for Engineering and Design and $109 for Supervision and Administration due to reanalysis of remaining requirements.

1486

4 FEB 1986 1486 Fisherman's Wharf Area, California

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEAR 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	BREAKWATERS	8,430,000	569,000	7,287,000	574,000	
2	RECREATION FACILITIES	20,000			20,000	
3	ENGINEERING AND DESIGN	385,000	360,000	24,000	1,000	
4	SUPERVISION AND ADMINISTRATION	765,000	428,000	332,000	5,000	
5						
6	TOTAL COST (Fed Funds and					
7	Non-Fed Contrib)	9,600,000	1,357,000	7,643,000	600,000	
8	Undelivered Orders		2,052,000	-2,052,000		
9	TOTAL OBLIGATION (Fed Funds and					
10	Non-Fed Contrib)		3,409,000	5,591,000	600,000	
11						
12	FEDERAL FUNDS					
13	TOTAL COSTS	8,900,000	1,319,000	7,031,000	550,000	
14	Undelivered Orders		2,012,000	-2,012,000		
15	TOTAL OBLIGATIONS		3,331,000	5,019,000	550,000	
16						
17	NON-FEDERAL CONTRIBUTIONS					
18	TOTAL COST	700,000	38,000	612,000	50,000	
19	Undelivered Orders		40,000	-40,000		
20	TOTAL OBLIGATIONS		78,000	572,000	50,000	
21						
22	METHOD OF FINANCING					
23	FEDERAL FUNDS					
24	ALLOCATIONS		3,350,000	5,000,000		
25	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			19,000		
26	TOTAL FUNDS AVAILABLE FOR OBLIGATION			5,019,000		
27	APPROPRIATION REQUIRED				550,000	
28						
29						
30						

EFFECTIVE DATE: 1 JAN 86

DIVISION: SOUTH PACIFIC

DISTRICT: SAN FRANCISCO

REGION: CALIF-SOUTH PACIFIC

BASIN: SAN FRANCISCO BAY

PROJECT: FISHERMAN'S WHARF AREA, CALIFORNIA

4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEAR 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	NON-FEDERAL COSTS					
2	CASH CONTRIBUTIONS	700,000	700,000			
3	OTHER COSTS	0				
4	LANDS AND DAMAGES					
5	RELOCATIONS					
6	OTHER (BREAKWATERS)					
7	TOTAL NON-FEDERAL COST	700,000	700,000			
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EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SAN FRANCISCO | REGION: CALIF-SOUTH PACIFIC | BASIN: SAN FRANCISCO BAY | PROJECT: FISHERMAN'S WHARF AREA, CALIFORNIA

4 FEB 1986 1488

APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Port Hueneme Harbor, California (Continuing)

LOCATION: The project is located in Ventura County, on the coast of southern California, about 65 miles northwest of Los Angeles Harbor.

AUTHORIZATION: 1968 River and Harbor Act.

BENEFIT-COST RATIO: The remaining benefit - remaining cost ratio is 2.4 to 1 at 3-1/4 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1974) was 21.1 to 1. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Federal Cost		$2,501,000	
Estimated Non-Federal Cost		1,357,000	
Cash Contribution	$ 0		
Other Costs	1,357,000		
Total Estimated Project Cost		$3,858,000	
Allocations to 30 September 1985		$1,481,000	
Conference Allowance for FY 1986		0	
Allocation for FY 1986		0	
Allocations to Date		1,481,000	59
Allocation Requested for FY 1987		$1,020,000	100
Scheduled Balance to Complete After FY 1987		0	
Unscheduled Balance to Complete After FY 1987		0	

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Central Basin and existing Main Channel	100	Sep 1975
Expansion of Main Channel	Not Started	Sep 1987
Entire Project	96	Sep 1987

PHYSICAL DATA

Completed Work:
Main Channel:
Depth - 35 feet
Dimensions - 1,780 feet long by 275 feet wide and 540 feet long by 160 feet wide

Central Basin:
Depth - 35 feet
Area - 1,025 feet by 1,080 feet

Main Channel Expansion:
Widen 540 feet long by 115 feet wide and lengthen 90 feet long by 115 feet wide, all to a depth of 20 feet

Division: South Pacific

District: Los Angeles

Region: California-South Pacific
Port Hueneme Harbor, California

4 FEB 1986

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JUSTIFICATION: Port Hueneme is the only deep-water port between the Los Angeles-Long Beach Harbors to the south and the San Francisco Harbor to the north, a distance of 465 miles. The harbor services the major part of Ventura and Kern Counties and parts of Los Angeles, Santa Barbara, Tulare, and King Counties. Visits by supply boats servicing offshore oil platforms have increased due to the oil drilling activities in the Santa Barbara Channel. Tonnage handled by the port in support of oil drilling operations has increase from 28,000 tons in 1975 to 400,000 in 1985 and is projected to exceed 900,000 tons by the year 1995. The 50 boats that use Port Hueneme on a regular basis have been tied as much as eight abreast and waiting up to 24 hours for access to lifts at the port. These boats use all available port district owned berths. For the past six years, large merchant vessels have been forced to use Navy owned berths until oil supply boats could be moved. This increased congestion in the harbor presents a hazard to vessels attempting to navigate the channel. The purchase of U.S. Navy property by the Oxnard Harbor District in December 1984 provided one additional deep-draft berth. The channel dredging expansion will permit the Harbor District to construct an extension to the existing wharf, providing another berth. This will allow all ships to reach a berth, alleviating channel congestion. The expansion and modernization of the harbor would be of major significance to national defense in the event of an emergency. Average annual benefits, all navigation, are estimated to be $183,000, based on 1 October 1985 prices.

FISCAL YEAR 1987: The requested amount of $1,020,000 will be applied as follows:

Initiate and complete dredging of Main Channel	$ 776,000
Engineering and Design	156,000
Supervision and Administration	88,000
Total	$1,020,000

NON-FEDERAL COST: The cost to the local sponsor for complying with the requirements of local cooperation for construction of the project as set forth in the authorization legislation is $1,357,000, as follows:

Lands and damages (acquired)	$ 575,000
Dredging of berth area	782,000
Total	$1,357,000

STATUS OF LOCAL COOPERATION: The Board of Harbor Commissioners for the Oxnard Harbor District, the local sponsor, by Resolution dated 12 May 1980 indicated its willingness to provide the local cooperation necessary to implement the improvements at Port Hueneme Harbor. A $18,000,000 bond issue was acquired in November 1985 for financing construction of harbor facilities associated with expansion of the Federal project. The local sponsor advised that as of October 1985 they have expended approximately $23,000,000 for work supplemental to the project and associated work in the general project area. In addition, a portion of the completed work, by the Oxnard Harbor District, was accomplished under a Section 215 Agreement, Flood Control Act of 1968 (Public Law 90-483). Funds in the amount of $382,000 were reimbursed to the District by the Federal government in August 1973.

Port Hueneme Harbor, California

4 FEB 1986 1490

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COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $2,501,000 is an increase of $901,000 over the latest estimate ($1,600,000) submitted to Congress (FY 1974). This change includes increases of $1,328,000 based on higher price levels to 1 October 1985; $88,000 for an estimated inflation allowance from 1 October 1985 through the construction period; $1,775,000 due to increased unit costs for dredging and disposal; and $572,000 for Engineering and Design and $365,000 for Supervision and Administration based on reanalysis of remaining requirements. These increases were partially offset by a decrease of $3,227,000 for reclassification of the 420-foot extension of the Main Channel and the remaining 15 feet of the authorized 35-foot depth of the Main Channel expansion to the "Inactive" category.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: An Environmental Impact Statement was filed with CEQ on 29 August 1974. A Supplemental Environmental Assessment was signed by the District Engineer 26 September 1985 with a Finding of No Significant Impact.

The provisions of Section 404 of the Clean Water Act have been met with the submission of a Section 404(b)(1) Evaluation completed on 1 March 1985, a Public Notice issued 29 March 1985, a Certification issued by the State of California on 17 September 1985, and the District Engineer's signature on the Section 404 Evaluation Report on 26 December 1985.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1970 and allocated in FY 1971. Initial Federal construction funds to reimburse local interests were appropriated in FY 1973 and allocated in FY 1974.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: Los Angeles

Project: Port Hueneme Harbor, California

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	1,300 (Jul 71)		1,600 (Jul 72)		2,501 1/
Reason for Change		(300)		(901) 1/	
a. Price Escalation		105		1,416	
b. Design Changes					
c. Additional Function Added Under General Authorization					
d. Authorized Modifications				-3,227 2/	
e. Post-Contract Award and Other Estimating Adjustments		195		2,712 3/	
f. Schedule Changes					
g. Sundry					
h. Real Estate					

1/ Includes $88 allowance for estimated inflation from 1 October 1985 through the construction period.
2/ Reclassification of the remaining authorized project to the "Inactive" category.
3/ Includes $1,775 due to increased unit costs for dredging and disposal, $572 for Engineering and Design, and $365 for Supervision and Administration.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL

CLASSIFICATION: NAVIGATION (CHANNELS AND HARBORS)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	CHANNELS	1,737,000	961,000	0	776,000	
2	ENGINEERING AND DESIGN	547,000	348,000	43,000	156,000	
3	SUPERVISION AND ADMINISTRATION	217,000	121,000	8,000	88,000	
4						
5	TOTAL COST (Fed Funds and					
6	Non-Fed Contrib)	2,501,000	1,430,000	51,000	1,020,000	
7	Undelivered Orders		2,000	-2,000		
8	TOTAL OBLIGATIONS (Fed Funds and					
9	Non-Fed Contrib)		1,432,000	49,000	1,020,000	
10						
11	FEDERAL FUNDS					
12	TOTAL COST	2,501,000	1,430,000	51,000	1,020,000	
13	Undelivered Orders		2,000	-2,000		
14	TOTAL OBLIGATIONS		1,432,000	49,000	1,020,000	
15						
16	NON-FEDERAL CONTRIBUTIONS					
17	TOTAL COST					
18	Undelivered Orders (None)					
19	TOTAL OBLIGATIONS					
20						
21	METHOD OF FINANCING					
22	FEDERAL FUNDS					
23	ALLOCATIONS		1,481,000			
24	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			49,000		
25	TOTAL FUNDS AVAILABLE FOR OBLIGATION			49,000		
26	APPROPRIATIONS REQUIRED				1,020,000	
27						
28	NON-FEDERAL					
29	CASH CONTRIBUTIONS	0				
30	OTHER COSTS	1,357,000	569,000		788,000	
31	LANDS AND DAMAGES	(575,000)	(210,000)		(365,000)	
32	OTHER (DREDGING)	(782,000)	(359,000)		(423,000)	
33	TOTAL NON-FEDERAL COST	1,357,000	569,000		788,000	

EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: LOS ANGELES | REGION: CALIF-SOUTH PACIFIC | BASIN: SOUTH COASTAL | PROJECT: PORT HUENEME HARBOR, CALIFORNIA

4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Richmond Harbor, California (Continuing)

LOCATION: The project is located in central San Francisco Bay, in Contra Costa County near the City of Richmond, California.

AUTHORIZATION: Supplemental Appropriations Act, 1985 (Public Law 99-88).

BENEFIT-COST RATIO: The remaining benefit - remaining cost ratio is 3.3 to 1 at 8-1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 1.6 to 1. The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. (CofE) Cost
Estimated Federal Cost (C of E)	$19,300,000		
Estimated Federal Cost (USCG)	100,000		
Estimated Total Federal Cost	19,400,000		
Future Non-Federal Reimbursement -	2,600,000		
Estimated Federal Cost (Ultimate)		$ 16,800,000	
Estimated Non-Federal Cost		9,000,000	
Reimbursement - Deep Draft Navigation	$ 2,600,000		
Cash Contribution	6,400,000		
Other Costs	0		
Total Estimated Project Cost		$ 25,800,000	
Allocations to 30 September 1985		$ 15,000	
Conference Allowance for FY 1986		525,000	
Potential Allocation for FY 1986		935,000 1/	
Potential Allocations to Date		950,000	5
Allocation Requested for FY 1987		$ 8,000,000 2/	46
Scheduled Balance to Complete after FY 1987		10,350,000	
Unscheduled Balance to Complete after FY 1987		0	

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Channel	Not Started	Sep 1988
Entire Project		Sep 1988

1/ Based on the current project schedule.

2/ Obligation and expenditure of budgeted funds for construction of this project are contingent upon enactment of legislation enabling recovery of all or part of the costs to be expended by the project sponsor and the Federal Government, in accordance with the agreement between the Administration and the Senate Majority Leadership.

Division: South Pacific

District: San Francisco

4 FEB 1986

Region: California - South Pacific
Richmond Harbor, California

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PHYSICAL DATA

CHANNELS: Deepening the Harbor Entrance Channel, Potrero Reach Channel and Inner Harbor Channel to 41 feet. Widen the Potrero Reach Channel to 600 feet. Widen the berthing areas at the Inner Harbor Channel to 110 feet.

TURNING BASIN: Provide a 41 foot deep, 1,425 foot diameter Turning Basin at Ford Channel.

JUSTIFICATION: The growth of foreign and coastwise shipments and the introduction of large vessels in the World Pacific Basin Fleet have rendered the existing Federal project channel and turning basin inadequate and inefficient for modern transportation needs. Maneuvering of the vessels is restricted and the channels are too shallow for large containerships and other vessels, which must await high tide to navigate the channel. Because of long delays and the hazard of grounding, efficient cargo movement is impaired. Unless adequate channels are provided, longer delays will be experienced and increased congestion will limit traffic to vessels small enough to operate in existing channels, resulting in substantial economic losses. Bulk commodities coming into the harbor include fuel oils, vegetable oils and petro-chemicals. Total 1984 commercial tonnage moving through Richmond Harbor was over 15,000,000 tons. Container traffic is projected to increase fifty percent by 1995. The proposed improvements are required to permit this increase. Average annual benefits, all commercial navigation, are estimated at $8,170,000.

FISCAL YEAR 1987: The requested amount of $8,000,000 will be applied as follows:

Initiate Harbor Entrance Channel Dredging	$7,700,000
Engineering and Design	100,000
Supervision and Administration	200,000
Total	$8,000,000

NON-FEDERAL COST: Consistent with cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, and material disposal areas; and pay 25 percent of the costs allocated to deep draft navigation during construction, presently estimated at $6,400,000, pay an additional 10 percent of the costs allocated to deep draft navigation within a period of 30 years following completion of the project. Local interests have also agreed to make all required payments and voluntary contributions concurrently with project construction.

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STATUS OF LOCAL COOPERATION: By letter dated 26 August 1985 the City of Richmond stated its willingness to financially participate in the construction of the project at a level consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership. In accordance with FY 1985 Supplemental Appropriations Act (Public Law 99-88), a written agreement satisfying all the requirements of Section 221, Flood Control Act of 1970 (Public Law 91-611), will be obtained from the non-Federal sponsor and executed prior to 30 June 1986.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $19,300,000 is a decrease of $23,800,000 from the latest estimate ($43,100,000) submitted to Congress. This change includes increases of $1,741,000 based on higher price levels to 1 October 1985; $825,000 for an estimated inflation allowance from 1 October 1985 through the construction period. These increases were offset by decreases of $26,238,000 for reduction in project scope as the result of constructing the Southampton Shoal and Maneuvering Area under the San Francisco Bay to Stockton, California (John F. Baldwin and Stockton Ship Channels) project; $94,000 for Engineering and Design and $34,000 for Supervision and Administration due to reanalysis of requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement was submitted to EPA on 21 May 1982. A Supplemental Environmental Impact Statement is scheduled for submittal to EPA in July 1986.

The provisions of Section 404 of the Clean Water Act will be met with the submission of a Supplemental Environmental Impact Statement, including a Section 404(b)(1) evaluation, to Congress in July 1996.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1985 and for construction in the FY 1985 Supplemental Appropriations Act.

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HISTORIC CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: San Francisco

Project: Richmond Harbor, California

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Changes (4)	Current (5)
Federal Cost (Price Level)	43,100 (Oct 83)		43,100 (Oct 83)		19,300 1/
Reason for Change				(-) (23,800) 1/	
a. Price Escalation				2,566	
b. Design Changes				(-) 26,366 2/	
c. Additional Functions Added Under General Authorization					
d. Authorized Modification					
e. Post-Contract Award and Other Estimating Adjustments					
f. Schedule Changes					
g. Sundry					
h. Real Estate					

1/ Includes $825 allowance for estimated inflation from 1 October 1985 through the construction period.
2/ Includes decreases of $26,238 due to inclusion of Southampton Shoal and Maneuvering Area under the San Francisco Bay to Stockton (John F. Baldwin and Stockton Ship Channels) project, $94 in Engineering and Design, and $34 in Supervision and Administration due to reanalysis of requirements.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEAR 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	CHANNELS	23,840,000			10,300,000	13,540,000
2	ENGINEERING AND DESIGN	980,000		775,000	155,000	50,000
3	SUPERVISION AND ADMINISTRATION	880,000		175,000	345,000	360,000
4						
5	TOTAL COST (Fed Funds and					
6	Non-Fed Contrib)	25,700,000		950,000	10,800,000	13,950,000
7	Undelivered Orders (None)					
8	TOTAL OBLIGATIONS (Fed Funds and					
9	Non-Fed Contrib)			950,000	10,800,000	13,950,000
10						
11	FEDERAL FUNDS					
12	TOTAL COSTS	19,300,000		950,000	8,000,000	10,350,000
13	Undelivered Orders (None)					
14	TOTAL OBLIGATIONS			950,000	8,000,000	10,350,000
15						
16	NON-FEDERAL CONTRIBUTIONS					
17	TOTAL COST	6,400,000			2,800,000	3,600,000
18	Undelivered Orders (None)					
19	TOTAL OBLIGATIONS				2,800,000	3,600,000
20						
21	METHOD OF FINANCING					
22	FEDERAL FUNDS					
23	ALLOCATIONS		15,000	935,000		
24	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			15,000		
25	TOTAL FUNDS AVAILABLE FOR OBLIGATION			950,000 1/		
26	APPROPRIATION REQUIRED				8,000,000 2/	10,350,000
27						
28						
29						

EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SAN FRANCISCO | REGION: CALIF-SOUTH PACIFIC | BASIN: SAN FRANCISCO BAY | PROJECT: RICHMOND HARBOR, CALIFORNIA

4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: CHANNELS AND HARBORS (NAVIGATION)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEAR 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	NON-FEDERAL					
2	CASH CONTRIBUTIONS	6,400,000		2,800,000	3,600,000	
3	OTHER COSTS	0				
4	LANDS AND DAMAGES					
5	RELOCATIONS					
6	OTHER (DREDGING)					
7	TOTAL NON-FEDERAL COST	6,400,000		2,800,000	3,600,000	
8						
9						
10						
11	1/ Based on current project schedule.					
12	2/ Obligation and expenditure of budgeted funds for construction of this project are contingent upon enactment of					
13	legislation enabling recovery of all or part of the costs to be expended by the project sponsor and the Federal					
14	Government, in accordance with the agreement between the Administration and the Senate Majority Leadership.					
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EFFECTIVE DATE	DIVISION: SOUTH PACIFIC	REGION: CALIF-SOUTH PACIFIC	PROJECT: RICHMOND HARBOR, CALIFORNIA
1 JAN 86	DISTRICT: SAN FRANCISCO	BASIN: SAN FRANCISCO BAY	

4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: Sacramento River Deep Water Ship Channel, California (Continuing)

LOCATION: The project is located on the Sacramento River from New York Slough to the Port of Sacramento, in the counties of Sacramento, Solano, and Yolo, California.

AUTHORIZATION: Supplemental Appropriations Act, 1985 (PL 99-88).

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 2.0 to 1 at 8-1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 2.5 to 1. The benefit-cost ratio was based on the project's fair share of incremental benefits and costs associated with this modification of the previous project.

SUMMARIZED FINANCIAL DATA

Estimated Federal Cost			$52,900,000
Corps of Engineers	$52,700,000		
United States Coast Guard	200,000		
Scheduled Construction		$52,000,000	
Corps of Engineers	$51,800,000		
United States Coast Guard	200,000		
Unscheduled Construction		900,000 1/	
Estimated Non-Federal Cost			45,400,000
Scheduled Construction		$44,500,000	
Cash Contribution	$17,450,000		
Other Costs	27,050,000		
Unscheduled Construction		$ 900,000 1/	
Cash Contribution	$ 900,000		
Other Costs	0		
Total Estimated Scheduled Construction Cost			$96,500,000
Total Estimated Unscheduled Construction Cost			$ 1,800,000 1/
Total Estimated Project Cost			$98,300,000

STATUS: (1 Jan 85)

	PERCENT COMPLETE	COMPLETION SCHEDULE
Channels	Not started	Sep 1994
Fish and Wildlife		Sep 1991
Recreation Facilities		Unsched 1/
Entire Project		Sep 1994

1/ Recreation facilities proposed for development in the Survey Report have already been constructed by Solano County.

Division: South Pacific

District: Sacramento

Region: California-South Pacific

6 FEB 1986

Sacramento River Deep Water Ship Channel, California

1500

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SUMMARIZED FINANCIAL DATA (CONT)		Accum. % of Est. Fed. (CofE)Cost
Allocations to 30 September 1985	54,000	
Conference Allowance for FY 1986	0	
Potential Allocation for FY 1986	1,180,000 1/	
Potential Allocations through FY 1986	1,234,000	2
Allocation Requested for FY 1987	$ 3,600,000 2/	9
Scheduled Balance to Complete After FY 1987	46,966,000	
Unscheduled Balance to Complete After FY 1987	900,000	

1/ Based on the current project schedule.
2/ Obligation and expenditure of budgeted funds for construction of this project are contingent upon enactment of legislation enabling recovery of all or part of the costs to be expended by the project sponsor and the Federal Government, in accordance with the agreement between the Administration and the Senate Majority Leadership.

PHYSICAL DATA

Channels:
Deepen existing 30 foot Sacramento Deep Water Ship Channel from Collinsville to the Port of Sacramento to 35 feet and widen channel 250 to 350 feet as necessary.

Fish and Wildlife Areas:
Deposit dredged material at Prospect Island to aid in development of 63 acres of wetland and upland habitat for fish and wildlife mitigation purposes.

JUSTIFICATION: Inadequate channel depths and widths produce serious detriments to deep-draft commercial vessel traffic using the navigation channel on the Sacramento River from Collinsville to the Port of Sacramento. Since the existing channel was completed in 1963, tonnages have steadily increased as a result of increased productivity of the agricultural industry in the northern and central portions of California, increased exports of forest products from this region, and increased foreign demand for agricultural products. Imports, including nitrogeneous fertilizers, bulk commodities, and general cargo have also increased during this period. In 1984, 1,670,000 tons of commodities moved through the Port of Sacramento. This exceeded predictions made during initial studies which predicted that the current level of operations would not be reached until the year 2007. In addition, the channel has provided deepwater access for industries in the service area. Development and change in waterborne commerce have been rapid in recent years. New shipping techniques and modern terminal development have been necessary to accommodate this

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increased commerce. Economic growth in the Orient is generally expanding at a higher rate than in the rest of the world, and new or prospective trade policies point to the expansion of United States trade in there countries. This trade is significant to the Port of Sacramento since the port's service area produces large quantities of rice, other grains, wood chips, and other dry bulk products required in the economy of the Orient. Average annual benefits are as follows:

BENEFITS	AMOUNT (1 October 1985)
Navigation	$15,530,000
General Recreation	660,000
	$16,190,000

FISCAL YEAR 1987: The requested amount of $3,600,000 will be applied as follows:

Initiate dredging from Port of Sacramento Mile 43 to Mile 35	$3,000,000
Engineering and Design	300,000
Supervision and Administration	300,000
Total	$3,600,000

NON-FEDERAL COSTS: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and material disposal areas, presently estimated at $5,300,000; modify or relocate buildings, utilities, roads, and other facilities, except railroads and railroad bridges, where necessary in the construction of the project, presently estimated at $1,100,000; and provide retention dikes for dredged material disposal area, presently estimated at $20,650,000; pay 25 percent of the costs allocated to deep draft navigation during construction, presently estimated at $17,450,000; and pay one-half of the separable and joint costs allocated to recreation, presently estimated at $900,000 and bear all costs of operation, maintenance, and replacement of recreation facilities, presently estimated at $100,000. Local interests have also agreed to make all required payments and voluntary contributions concurrently with project construction.

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STATUS OF LOCAL COOPERATION: The Port of Sacramento, by letter dated 18 January 1985, expressed its willingness to participate in the project on the basis of the Department of the Army's innovative financing proposals. On 9 August 1985 a meeting was held between Corps of Engineers and Port of Sacramento representative to discuss the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership. In accordance with the Fiscal Year 1985 Supplemental Appropriations Act (Public Law 99-88), a written agreement satisfying all the requirements of Section 221, Flood Control Act of 1970 (Public Law 91-611), will be obtained from the non-Federal sponsor and executed prior to 30 June 1986. Recreation facilities proposed for development in the Survey Report have already been constructed by Solano County.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $52,700,000 is a decrease of $9,300,000 from the latest estimate ($62,000,000) submitted to Congress. This change includes increases of $3,100,000 based on higher price levels to 1 October 1985 and $6,200,000 for estimated inflation allowance from 1 October 1985 through the construction period and $50,000 for repricing on fish and wildlife facilities based on more detailed quantities. These increases were offset by decreases of $8,900,000 for removal of the salinity control structure since physical model test results show no significant adverse salinity effects; $5,500,000 for decrease in remaining dredging quantities based on more extensive geotechnical studies; $1,600,000 for Engineering and Design and $2,650,000 for Supervision and Administration due to reanalysis of remaining requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement was filed with EPA 8 May 1981. A Supplemental Environmental Impact Statement will be prepared and submitted to EPA in March 1986.

A Section 404(b)(1) evaluation was included in the Final Environmental Impact Statement filed with EPA 8 May 1981. The Supplemental Environmental Impact Statement scheduled to be submitted to EPA in March 1986 will contain an updated Section 404(b)(1) evaluation, due to changes in dredge material disposal areas.

OTHER INFORMATION: Funds to initiate Preconstruction Planning were appropriated in Fiscal Year 1982. Funds to initiate construction were appropriated in the FY 1985 Supplemental Appropriations Act.

As a result of implementing cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, the Port of Sacramento, based on their ability to pay, has proposed staged construction of the project. The first stage would deepen the existing channel to 35 feet; the second stage would widen the channel to full authorized dimensions. The Corps is currently scheduled to complete its evaluation of this proposal in March 1986.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: Sacramento

Project: Sacramento River Deep Water Ship Channel, California

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	62,000 (Oct 83)		62,000 (Oct 83)		52,700 1/
Reason for Change				(-) 9,300 1/	
a. Price Escalation				9,300	
b. Design Changes				(-) 14,350 2/	
c. Additional Function Added Under General Authorization					
d. Authorized Modification					
e. Post-Contract Award and Other Estimating Adjustments				(-) 4,250 3/	
f. Schedule Changes					
g. Sundry					
h. Real Estate					

1/ Includes $6,200 allowance for estimated inflation from 1 October 1985 through the construction period.
2/ Decreases of $8,900 for removal of the salinity control structure, $5,500 for decrease in remaining dredging quantities based on more extensive geotechnical studies, offset by an increase of $50 for repricing of fish and wildlife facilities.
3/ Decrease of $1,600 for Engineering and Design and $2,650 for Supervision and Administration due to reanalysis of remaining requirements.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL

CLASSIFICATION: NAVIGATION (CHANNELS & HARBORS)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	FISH AND WILDLIFE	500,000				500,000
2	CHANNELS	62,190,000			4,000,000	58,190,000
3	RECREATION	1,565,000				1,565,000
4	ENGINEERING AND DESIGN	2,760,000		1,034,000	400,000	1,326,000
5	SUPERVISION AND ADMINISTRATION	4,035,000		200,000	400,000	3,435,000
6						
7	TOTAL COST (Fed Funds and					
8	Non-Fed Contrib)	71,050,000		1,234,000	4,800,000	65,016,000
9	Undelivered Orders (None)					
10	TOTAL OBLIGATIONS (Fed Funds and					
11	Non-Fed Contrib)			1,234,000	4,800,000	65,016,000
12						
13	FEDERAL FUNDS					
14	TOTAL COST	52,700,000		1,234,000	3,600,000	47,866,000
15	Undelivered Orders (None)					
16	TOTAL OBLIGATIONS			1,234,000	3,600,000	47,866,000
17						
18	NON-FEDERAL CONTRIBUTIONS					
19	TOTAL COST	18,350,000			1,200,000	17,150,000
20	Undelivered Orders (None)					
21	TOTAL OBLIGATIONS				1,200,000	17,150,000
22						
23	METHOD OF FINANCING					
24	FEDERAL FUNDS					
25	ALLOCATIONS		54,000	1,180,000 1/		
26	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			54,000		
27	TOTAL FUNDS AVAILABLE FOR OBLIGATION			1,234,000	3,600,000 2/	47,866,000
28	APPROPRIATIONS REQUIRED					
29						
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31						
32						
33						

EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF - SOUTH PACIFIC | BASIN: SACRAMENTO | PROJECT: SACRAMENTO RIVER DEEP WATER SHIP CHANNEL, CALIFORNIA

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: NAVIGATION (CHANNELS & HARBORS)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	NON-FEDERAL					
2	CASH CONTRIBUTIONS	10,350,000			1,200,000	17,150,000
3	OTHER COSTS	27,050,000		1,100,000	4,600,000	21,350,000
4	LANDS AND DAMAGES	(5,300,000)		(300,000)	(2,300,000)	(2,700,000)
5	RELOCATIONS	(1,100,000)		(300,000)	(800,000)	(0)
6	OTHER (RETENTION DIKES)	(20,650,000)		(500,000)	(1,500,000)	(18,650,000)
7	TOTAL NON-FEDERAL COST	45,400,000		1,100,000	5,800,000	38,500,000
8						
9						
10	1/ Based on the current project schedule.					
11	2/ Obligations and expenditures of budgeted funds for construction of this project are contingent upon enactment					
12	of legislation enabling recovery of all or part of the costs to be expended by the project sponsor and the					
13	Federal Government, in accordance with the agreement between the Administration and the Senate Majority					
14	Leadership.					
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EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF - SOUTH PACIFIC | BASIN: SACRAMENTO | PROJECT: SACRAMENTO RIVER DEEP WATER SHIP CHANNEL, CALIFORNIA

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APPROPRIATION TITLE: Construction, General - Channels and Harbors (Navigation)

PROJECT: San Francisco Bay to Stockton, California (John F. Baldwin and Stockton Ship Channels) (Continuing)

LOCATION: The project is located on navigation channels that extend from the San Francisco Bay entrance to the Port of Stockton through San Francisco, Marin, Contra Costa, Solano, Sacramento, and San Joaquin Counties.

AUTHORIZATION: 1965 River and Harbor Act

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 3.9 to 1 at 3-1/4 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1970) was 2.4 to 1. The benefit-cost ratio was based on the project's fair share of incremental benefits and costs associated with this modification of five previous projects.

SUMMARIZED FINANCIAL DATA

			Accum. % of Est. Fed. (CofE) Cost
Estimated Federal Cost (C of E)	$138,000,000		
Estimated Federal Cost (USCG)	1,100,000		
Estimated Total Federal Cost	139,100,000		
Future Non-Federal Reimbursement -	2,600,000		
Estimated Federal Cost (Ultimate)		$136,500,000	
Estimated Non-Federal Cost		41,400,000	
Reimbursement - Recreation	$ 2,600,000		
Cash Contribution - Land Enhancement	250,000		
Other Costs	38,550,000		
Total Estimated Project Cost		$177,900,000	
Allocations to 30 September 1985		$ 34,943,000	
Conference Allowance for FY 1986		21,000,000	
Allocation for FY 1986		13,600,000 1/	
Allocations to Date		48,543,000	35
Allocation Requested for FY 1987		$ 3,900,000	38
Scheduled Balance to Complete after FY 1987		16,150,000	
Unscheduled Balance to Complete after FY 1987		69,407,000	

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Channels	33	Unsched
Fish and Wildlife	0	Sep 1989
Levees	4	Sep 1991
Recreation Facilities	0	Sep 1988
Entire Project	28	Unsched

1/ Reflects $6,900,000 reduction assigned as savings and slippage and transfer of $500,000 from the project.

Division: South Pacific District: Sacramento Region: California-South Pacific

San Francisco Bay to Stockton, California (John F. Baldwin and Stockton Ship Channels)

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PHYSICAL DATA

Channels: Deepen San Francisco Bar Channel to 55 feet. Deepen main internal bay channels upstream to Avon to 45 feet, and deepen the existing alignment of the Suisun Bay and Stockton Ship Channels from Avon to Stockton to 35 feet.

Maneuvering Areas: Enlarge and deepen maneuvering areas adjacent to major petroleum cargo terminals to 45 feet.

Recreation Facilities: Provide public recreation facilities at Roberts Island, including picnic and camping units, swim beach, launch ramps, and roads and parking areas.

Revetment: Place rock revetment on levees bordering the ship channel.

Fish and Wildlife Areas: Deposit dredged material on Venice Cut Island to convert it to a combination marshland, open water, and upland habitat; and establish wetlands on both Donlon and Venice Cut Islands.

Turning Basin: Provide access and turning basin facilities near the refinery piers at Martinez.

JUSTIFICATION: Inadequate channel depths and widths, and circuitous navigation channels produce serious detriments to deep-draft commercial and military vessel traffic using the navigation channels that extend from the San Francisco Bay entrance upstream to the Port of Stockton. Many existing vessels can use the navigation channels only by partial loading, awaiting favorable tides, or with other costly restrictions. Current trends in the shipping industry toward larger, deeper-draft vessels will aggravate these detriments. The project will provide wider, deeper channels to accommodate the larger vessels and reduce the chance of collision. Selective dredged material deposits will be used for a proposed public recreation area and to enhance wildlife conditions. Average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Navigation	$33,170,000
Land Enhancement	258,000
General Recreation	1,472,000
Area Redevelopment	100,000
	$35,000,000

San Francisco Bay to Stockton, California (John F. Baldwin and Stockton Ship Channels)

4 FEB 1986

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FISCAL YEAR 1987: The requested amount of $3,900,000 will be applied as follows:

Complete Channel Dredging Stake Point to Mouth of New York Slough	$1,000,000
Initiate and Complete Donlon Island Fish and Wildlife Facilities	260,000
Initiate Wavewash Bank Protection Contract No. 1	400,000
Initiate Robert's Island Recreation Facilities	380,000
Engineering and Design	1,470,000
Supervision and Administration	390,000
Total	$3,900,000

NON-FEDERAL COSTS: Estimated costs to the local sponsor of complying with the requirements of local cooperation for construction of the project as set forth in the authorizing legislation are as follows:

Lands	$ 4,500,000
Relocations	5,000,000
Berthing areas	8,870,000
Dredged material retention dikes	20,180,000
Cash contribution (land enhancement)	250,000
Reimbursement (recreation)	2,600,000
Total	$41,400,000

The annual cost for maintenance and operation is estimated at $392,000 including $135,000 estimated annual cost of maintenance and operation of project recreation lands and facilities.

STATUS OF LOCAL COOPERATION: The Board of Supervisors of Contra Costa County, by resolution adopted 16 October 1979, expressed intention to furnish the required assurances of local cooperation for the John F. Baldwin portion of the project based on the incremental approach to project construction. Formal assurances for deepening and otherwise improving the Stockton Deep Water Ship Channel from Pittsburg to Stockton were furnished by the Stockton Port District by letter dated 9 April 1970. The Stockton Port District provided formal assurances for navigation, recreation, and fish and wildlife mitigation and enhancement for the Avon to Stockton portion of the project on 13 April 1982. In accordance with Section 221 of the Flood Control Act of 1970 (Public Law 91-611) a written agreement satisfying all the requirements of local cooperation for Southampton Shoal Channel and Richmond Long Wharf maneuvering area was obtained from the Contra Costa County Board of Supervisors and was signed by the District Engineer 31 July 1984. Formal assurance for West Richmond Channel, Pinole Shoal Channel and Carquinez Strait will be requested from the Contra Costa County Board of Supervisors before any construction is accomplished in those areas.

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COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $138,000,000 is a decrease of $11,000,000 from the latest estimate ($149,000,000) submitted to Congress. This change includes decreases of $900,000 for estimated inflation allowance through the construction period; $8,000,000 on Richmond Long Wharf Maneuvering Area due to decreased quantities and $2,200,000 due to favorable bids; $500,000 on McDonald Island to Avon due to decreased quantities and $500,000 due to favorable bids; and $4,100,000 as a result of reclassification to "Inactive" status of the widening of the channel between New York Slough to Avon for two way traffic. These decreases were partially offset by increases of $390,000 due to changed site conditions for McDonald Island to Jersey Island site and $4,810,000 for unanticipated subsurface conditions for a portion of the McDonald Island to Avon reach.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: Final Environmental Impact Statement for dredging of San Francisco Bar was submitted to CEQ 14 April 1971. Final Environmental Impact Statement covering Venice Island to Stockton bank protection was submitted to CEQ 14 October 1971. The Final Environmental Impact Statement covering the project from Avon to Stockton was submitted to EPA 26 July 1981. The Final Environmental Impact Statement covering the project for the Southampton Channel and Richmond Long Wharf Maneuvering Area was submitted to EPA 15 July 1984. The Environmental Impact Statement covering the West Richmond Channel, Carquinez Strait Suisun Bay Channel, and Pinole Shoal Channel is unscheduled at this time pending resolution of possible upstream salinity intrusion problems.

The provisions of Section 404 of the Clean Water Act for the New York Slough to Stockton portion of the project have been met by a State Water Quality Certification on 23 June 1981. The provisions of Section 404 of the Clean Water Act for the McDonald Island to Avon reach have been met by a Section 404(b)(1) Evaluation in June 1985, a Public Notice issued on 14 June 1985, a Certification from the State of California on 18 September 1985, and the District Commander's signture on the Finding of Compliance on 9 October 1985. The provisions of Section 404 of the Clean Water Act for the Southampton Channel and Richmond Long Wharf Maneuvering Area and West Richmond Channel portion of the project were met by a Regional Water Quality Control Board Certification on 15 July 1984. Compliance with the Clean Water Act for the remaining reaches will be determined as engineering studies progress.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1967 and for construction in FY 1970.

As requested by the Congress, special engineering studies were initiated in FY 1978 to further define the salinity problem associated with the channel deepening and to evaluate the feasibility of modifying releases or constructing sills as remedial measures to reduce salinity intrusion. These studies included model tests and the development of a data storage and retrieval system to analyze both prototype and model data. Model tests of the Stockton Ship Channel (reach from Avon to Stockton), functioning alone, and of the Stockton Ship Channel functioning in conjunction with the Sacramento Ship Channel have been completed. The tests revealed that no measurable adverse effects on salinity distribution would occur from deepening the Stockton channel alone. The proposed deepening from 35 to 45 feet of the

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remaining reach of the existing John F. Baldwin Channel has been viewed with concern by some local interest groups, because of possible upstream salinity intrusion. Therefore, the construction of this reach is currently unscheduled, to allow sufficient time for additional engineering and design analysis to address these concerns, and if required, to develop appropriate mitigation measures.

The project authorization for the 11.3 mile reach between New York Slough and Avon included widening the existing 300-foot one-way channel to 450 feet between New York Slough and Middle Point (5.4 miles) and to 600 feet between Middle Point and Avon (5.9 miles). The widening was included to provide two-way traffic, decrease the hazard due to possible collisions and increase safety near the Concord Naval Weapons Station ammunition loading piers. An evaluation of the current navigational needs in this reach was conducted and the review revealed that local navigational interests including the Stockton Port District, the local sponsor for the project, the U.S. Coast Guard, Concord Naval Weapons Station, and others, currently do not have the need or forsee the need for a two-way width in the near future. The reclassification to the "Inactive" category for this portion of the project was approved 27 August 1985.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: Sacramento

Project: San Francisco Bay to Stockton, California (John F. Baldwin and Stockton Ship Channels)

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	54,700 (Jul 68)		149,000 1/		138,000 1/ 2/
Reason for Change		(94,300) 1/		(-)(11,000) 2/	
a. Price Escalation		133,312		(-) 900	
b. Design Changes		(-)44,247		710 3/	
c. Additional Function Added Under General Authorization					
d. Authorized Modification					
e. Post-Contract Award and Other Estimating Adjustments		(-)9,505		(-)10,810 4/	
f. Schedule Changes					
g. Sundry		14,740			
h. Real Estate					

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes a reduction of $900 in the estimated inflation allowance through the construction period.
3/ Includes an increase of $4,810 for unanticipated subsurface conditions, partially offset by a decrease of $4,100 due to reclassification to "Inactive" status of widening New York Slough to Avon reach.
4/ Includes decreases for favorable contract bids of $2,200 on Richmond Long Wharf Maneuvering Area and $8,000 due to decreased quantities; $500 on McDonald Island to Avon contract due to favorable contract bids and $500 due to decreased quantities; partially offset by an increase of $390 due to unfavorable site conditions at McDonald Island to Jersey Island site.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: NAVIGATION (CHANNELS & HARBORS)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	FISH & WILDLIFE FAC	480,000			260,000	220,000
2	CHANNELS	98,670,000	19,775,000	12,660,000	1,000,000	65,235,000
3	LEVEES & FLOODWALLS	4,700,000	154,000		400,000	4,146,000
4	RECREATION FACILITIES	4,600,000			380,000	4,220,000
5	ENGINEERING AND DESIGN	19,890,000	11,737,000	1,499,000	1,470,000	5,184,000
6	SUPERVISION AND ADMINISTRATION	9,910,000	1,998,000	720,000	390,000	6,802,000
7						
8	TOTAL COST (Fed Funds and					
9	Non-Fed Contrib)		33,664,000	14,879,000	3,900,000	85,807,000
10	Undelivered Orders	138,250,000	1,229,000	-1,229,000		
11	TOTAL OBLIGATIONS (Fed Funds and		34,893,000	13,650,000	3,900,000	85,807,000
12	Non-Fed Contrib)					
13						
14	FEDERAL FUNDS					
15	TOTAL COST	138,000,000	33,664,000	14,879,000	3,900,000	85,557,000
16	Undelivered Orders		1,229,000	-1,229,000		
17	TOTAL OBLIGATIONS		34,893,000	13,650,000	3,900,000	85,557,000
18						
19	NON-FEDERAL CONTRIBUTIONS					
20	TOTAL COST	250,000				250,000
21	Undelivered Orders (None)					
22	TOTAL OBLIGATIONS					250,000
23						
24	METHOD OF FINANCING					
25	FEDERAL FUNDS					
26	ALLOCATIONS		34,943,000	13,600,000 1/		
27	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			50,000		
28	TOTAL FUNDS AVAILABLE FOR OBLIGATION			13,650,000		
29	APPROPRIATIONS REQUIRED				3,900,000	85,557,000
30						
31	1/ Reflects $6,900,000 reduction assigned as savings and slippage and transfer of $500,000 from the project.					
32						
33						

EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF-SOUTH PACIFIC | BASIN: SF BAY - SAN JOAQUIN | PROJECT: SAN FRANCISCO BAY TO STOCKTON, CALIFORNIA (JOHN F. BALDWIN AND STOCKTON SHIP CHANNELS)

4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL

CLASSIFICATION: NAVIGATION (CHANNELS & HARBORS)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	NON-FEDERAL					
2	CASH CONTRIBUTIONS	250,000				250,000
3	OTHER COSTS	38,550,000	9,065,000	4,475,000	230,000	24,780,000
4	LANDS AND DAMAGES	(4,500,000)	(3,070,000)	(1,070,000)	(230,000)	(130,000)
5	RELOCATIONS	(5,000,000)	(3,330,000)	(1,110,000)		(560,000)
6	OTHER (BERTHING AREAS)	(8,870,000)	(765,000)	(1,755,000)		(6,350,000)
7	OTHER (SPOIL RETENTION DIKES)	(20,180,000)	(1,900,000)	(540,000)		(17,740,000)
8	TOTAL NON-FEDERAL COST	38,800,000	9,065,000	4,475,000	230,000	25,030,000
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EFFECTIVE DATE: 1 JAN 86

DIVISION: SOUTH PACIFIC

DISTRICT: SACRAMENTO

REGION: CALIF-SOUTH PACIFIC

BASIN: SF BAY - SAN JOAQUIN

PROJECT: SAN FRANCISCO BAY TO STOCKTON, CALIFORNIA (JOHN F. BALDWIN AND STOCKTON SHIP CHANNELS)

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Phoenix, Arizona and Vicinity (Including New River)(Stage 2 and Remaining Work)(Continuing)

LOCATION: The project is located in Maricopa County, Arizona, in and adjacent to the city of Phoenix.

AUTHORIZATION: 1965 Flood Control Act

BENEFIT-COST RATIO: The remaining benefit - remaining cost ratio is 2.8 to 1 at 3-1/4 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1980) was 1.8 to 1. The benefit-cost ratio was based on the project's fair share of system benefits in a system including this project and Stage 1.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Federal Cost		$232,000,000	
Estimated Non-Federal Cost		183,000,000	
Cash Contribution	$ 16,900,000		
Other Costs	166,100,000		
Total Estimated Project Cost		$415,000,000	
Allocations to 30 September 1985		$ 45,057,000	
Conference Allowance for FY 1986		18,000,000	
Allocation for FY 1986		17,700,000 1/	
Allocations to Date		62,757,000	27
Allocation Requested for FY 1987		$ 32,000,000	41
Scheduled Balance to Complete After FY 1987		137,243,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Relocations	0	May 1986
Reservoirs	100	Sep 1984
Dams	100	Apr 1985
Roads-Access	100	Sep 1984
Channels	11	Jul 1991
Levees	68	Feb 1987
Recreation Facilities	3	Sep 1991
Bank Stabilization	0	Feb 1987
Cultural Resource Preservation	58	Sep 1991
Buildings, Grounds & Utilities	100	Sep 1984
Permanent Operating Equipment	100	Sep 1984
Entire Project	18	Sep 1991

1/ Reflects $300,000 reduction assigned as savings and slippage.

Division: South Pacific District: Los Angeles Region: Lower Colorado

Phoenix, Arizona and Vicinity (Including New River)(Stage 2 and Remaining Work)

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PHYSICAL DATA

Relocations:
Railroad bridge: $414,000

Detention Basins:
Adobe: 18,350 acre-feet
New River: 34,500 acre-feet

Channels:
Concrete rectangular: 11.5 miles
Concrete trapezoidal: 2.1 miles
Earth bottom trapezoidal: 4.5 miles

Levees: 4.0 miles

Bank Stabilization: 4.2 miles

Flowage Easement: 19.5 miles

Sediment Basin:
Cave Creek: 148 acre-feet
Cudia City Wash: 32.6 acre-feet

JUSTIFICATION: The authorized plan of improvement will protect the Phoenix metropolitan area from floodflows originating in the New River Mountains, to the north and west of the city. Damage to property in the overflow area is caused principally by inundation and debris deposition. Floodflows result primarily from local thunderstorms of high intensity and short duration. The population of Phoenix has increased from 107,000 in 1950 to an estimated 880,000 in 1985. The incorporated area of Phoenix increased from 17 to 375 square miles between 1950 and 1985. This growth, which resulted in the conversion of agricultural and desert properties into urban uses, is the principal reason for the aggravation of the flood problem. The entire project will prevent about 72 percent of the total average annual damages in the overflow area. The 1985 value of the protected area is $12.4 billion, and the 1985 population within the area protected by the entire proposed project is about 253,000. Stage 2 and Remaining Work is the second part of the overall Phoenix, Arizona and Vicinity project. Stage 1 provided for construction of the Cave Buttes and Dreamy Draw Detention Basins. The overall project will provide protection to about 50,500 acres consisting of 19,000 acres of valuable residential land, 2,900 acres of valuable commercial land, 4,400 acres of urban-related land uses, 12,300 acres of valuable agricultural land, and 11,900 acres of undeveloped land and wasteland. In August 1963, a flood occurred about 10 miles from the project area. Had this storm been centered over the project area, it would have caused estimated damages of $454 million (1985 prices), of which about $360 million would have been prevented by the project. Estimated average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$14,896,000
Recreation	3,433,000
Area Redevelopment	1,271,000
	$19,600,000

Phoenix, Arizona and Vicinity (Including New River)(Stage 2 and Remaining Work)

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FISCAL YEAR 1987: The requested amount of $32,000,000 will be applied as follows:

Complete construction of channel, levees, and bank stabilization for Skunk Creek, New and Agua Fria Rivers	$ 7,733,000
Complete construction of Arizona Canal Diversion channel (ACDC) from Skunk Creek to Cactus Road	3,827,000
Initiate construction of ACDC from Cactus Road to Cave Creek	14,445,000
Initiate and complete construction of recreation facilities, Pinnacle Peak multi-use and sports areas at Adobe Dam	525,000
Initiate construction of recreation facilities from Skunk Creek to Cactus Road, ACDC	615,000
Engineering and Design	2,306,000
Supervision and Administration	2,549,000
Total	$32,000,000

NON-FEDERAL COSTS: The cost to the local sponsor or complying with the requirements of local cooperation for construction of the project is $183,000,000, broken down as follows:

Lands and Damages	$114,057,000
Relocations of Utilities, Highways and Bridges	46,029,000
Other, Compacted Fill	6,014,000
Cash Contribution	16,900,000
Total	$183,000,000

As of September 1985, local interests have incurred costs of about $80,800,000. Local interests are also required to maintain and operate the project upon completion. The estimated annual cost for operation and maintenance is $1,600,000.

STATUS OF LOCAL COOPERATION: The Flood Control District of Maricopa County, Arizona, the legally responsible agency, through the Board of Directors, by resolution dated 4 November 1963 (prior to project authorization), indicated its willingness to participate to the best of its ability by assuming the required items of local cooperation. However, at that time, the local cooperation requirements did not include any monetary contribution toward land enhancement benefits. By resolution dated 23 October 1967, local interests provided unequivocal assurances that they will meet all local requirements (including a 2.3 percent cash contribution) for Cave Buttes and Dreamy Draw Detention Basins. By 9 December 1974 resolution, the Flood Control District of Maricopa County indicated its willingness to participate in the additional requirements since authorization of the project. By resolution dated 3 March 1975, the Board of

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Supervisors for Maricopa County, the responsible agency for recreation, provided the required assurances for recreation facilities. A flood control tax of 20 cents per $100 assessed valuation was authorized by State legislation 4 May 1972 and established by the Board of Directors of Maricopa County for FY 1975. In 1983 the maximum levy was raised to 50 cents per $100. In August 1984 the Board of Directors of Maricopa County was given the authority to establish the amount of the tax on a continuing fiscal year basis. The tax will continue with the amount established on a fiscal year basis. Arizona State legislation enacted into law 9 April 1973 provides that the State of Arizona may allocate funds to pay for up to one-half of the cost of all lands, easements, rights-of-way, and relocations necessary for flood control projects authorized by Federal law, recommended by the Arizona Department of Water Resources, and approved by the legislature concurrent with the availability of Federal funds for their construction. In conformance with Section 221, Flood Control Act of 1970, Public Law 91-611, a written agreement of unconditional compliance with all requirements for the entire project was obtained from local interests and was signed by the Secretary of the Army 21 July 1977. In addition, a recreation cost-sharing agreement for Dreamy Draw Detention Basin was obtained from the local interests and signed by the Secretary of the Army 16 September 1983. The recreation cost-sharing agreement for Adobe Detention Basin is scheduled to be executed by the Secretary of the Army in March 1987.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $232,000,000 is a decrease of $14,000,000 from the latest estimate ($246,000,000) submitted to Congress. This change includes decreases of $19,000,000 for adjustments in the estimated inflation allowance through the construction period; $7,358,000 due to favorable contract bids and $16,107,000 as a result of reanalysis of quantities and unit prices for the Arizona Canal Diversion Channel; $415,000 due to change in the method of construction of railroad relocation at New River; and $438,000 for deletion of lighting from the sports and multi-use areas at Adobe Detention Basin. These decreases were partially offset by increases of $521,000 for higher price levels; $602,000 for final cost of completed work; $10,278,000 for a 0.5-mile extension of channelization, 0.6 miles of levees, 2.9 miles of bank stabilization on Skunk Creek, New and Agua Fria Rivers; $45,000 for addition of five trail rest areas along Skunk Creek, New and Agua Fria Rivers; $4,658,000 for a 1.1 mile channel extension and $5,651,000 for addition of a sediment basin on Cave Creek; $2,315,000 for addition of a sediment basin on Cudia City Wash; and $2,695,000 for Engineering and Design and $2,553,000 for Supervision and Administration due to reanalysis of remaining requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Environmental Impact Statement for the entire project was submitted to CEQ on 27 September 1976. A Finding of No Significant Impact for the Arizona Canal Diversion Channel was signed by the District Engineer on 25 March 1985. A Finding of No Significant Impact for additional disposal sites for the Arizona Canal Diversion Channel was signed by the District Engineer on 25 June 1985. The final Environmental Assessment for Skunk Creek, New and Agua Fria Rivers is scheduled for completion in February 1986.

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The provisions of Section 404 of the Clean Water Act do not apply because the project improvements do not involve the placement of fill material or the discharge of dredged material into the waters of the United States.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1973 and allocated in FY 1974. Funds to initiate construction were appropriated in FY 1980.

The House Appropriations Committee Report on the Energy and Water Development Appropriations Act for Fiscal Year 1986 included the following directive: "The Committee directs that the U.S. Army Corps of Engineers conduct a cost-benefit analysis, using current Federal guidelines and policy directives, of that portion of the Phoenix, Arizona and Vicinity (including New River) Flood Control Project known as Reach 4 from Dreamy Draw to Cudia City Wash, and provide this analysis to the Committee for its review." As directed, the cost-benefit analysis is currently underway and is scheduled to be submitted to the Committee in September 1986.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: Los Angeles

Project: Phoenix, Arizona and Vicinity (Including New River) (Stage 2 and Remaining Work)

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	210,172 1/ (Oct 78)		246,000 1/		232,000 1/ 2/
Reason for Change		(35,828) 1/		(-)(14,000) 2/	
a. Price Escalation		39,748		(-) 18,479	
b. Design Changes		2,147		14,112 3/	
c. Additional Function Added Under General Authorization					
d. Authorized Modifications					
e. Post-Contract Award and Other Estimating Adjustments		(-)9,071		(-) 9,633 4/	
f. Schedule Changes		407			
g. Sundry		2,597			
h. Real Estate					

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes a reduction of $19,000 for adjustments in the estimated inflation allowance through the construction period.
3/ Includes increases of $10,278 for a 0.5-mile extension of channelization, 0.6 miles of levees, 2.9 miles of bank stabilization on Skunk Creek, New and Agua Fria Rivers; $45 for addition of five trail rest areas along Skunk Creek, New and Agua Fria Rivers; $4,658 for channel extension and $5,651 for addition of a sediment basin on Cave Creek; and $2,315 for addition of a sediment basin on Cudia City Wash. These increases were

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partially offset by decreases of $7,982 as a result of reanalysis of quantities and unit prices for the Arizona Canal Diversion; $415 due to change in the method of construction of railroad relocation at New River; and $438 for deletion of lighting from the sports and multi-use areas at Adobe Detention Basin.

4/ Includes decreases of $7,358 due to favorable contract bids and $8,125 as a result of reanalysis of quantities and unit prices for the Arizona Canal Diversion Channel. These decreases were partially offset by increases of $602 for actual cost of completed work and $2,695 for Engineering and Design and $2,553 for Supervision and Administration due to reanalysis of remaining requirements.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	RELOCATIONS	414,000		414,000		
2	RESERVOIRS	672,000	672,000			
3	DAMS	20,593,000	20,363,000	230,000		
4	ROADS-ACCESS	464,000	464,000			
5	CHANNELS	149,409,000	1,476,000	11,183,000	20,325,000	116,425,000
6	LEVEES	5,188 000	1,881,000	1,280,000	2,027,000	
7	RECREATION FACILITIES	19,485,000	627,000	185,000	2,280,000	16,393,000
8	BANK STABILIZATION	6,865,000		2,600,000	4,265,000	
9	CULTURAL RESOURCE PRESERVATION	1,393,000	431,000			962,000
10	BUILDINGS, GROUNDS AND UTILITIES	74,000	74,000			
11	PERMANENT OPERATING EQUIPMENT	97,000	97,000			
12	ENGINEERING AND DESIGN	24,145,000 1/	13,342,000	2,173,000	2,623,000	6,007,000
13	SUPERVISION AND ADMINISTRATION	20,101,000	6,055,000	1,390,000	2,880,000	9,776,000
14						
15	TOTAL COST (Fed Funds and					
16	Non-Fed Contrib)	248,900,000	45,482,000	19,455,000	34,400,000	149,563,000
17	Undelivered Orders		729,000	-729,000		
18	TOTAL OBLIGATIONS (Fed Funds and					
19	Non-Fed Contrib)		46,211,000	18,726,000	34,400,000	149,563,000
20						
21	FEDERAL FUNDS					
22	TOTAL COST	232,000,000	44,325,000	18,432,000	32,000,000	137,243,000
23	Undelivered Orders		722,000	-722,000		
24	TOTAL OBLIGATIONS		45,047,000	17,710,000	32,000,000	137,243,000
25						
26	NON-FEDERAL CONTRIBUTIONS					
27	TOTAL COST	16,900,000	1,157,000	1,023,000	2,400,000	12,320,000
28	Undelivered Orders		7,000	-7,000		
29	TOTAL OBLIGATIONS		1,164,000	1,016,000	2,400,000	12,320,000
30						
30						
31						
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33						

EFFECTIVE DATE: 1 JAN 86

DIVISION: SOUTH PACIFIC

DISTRICT: LOS ANGELES

REGION: LOWER COLORADO

BASIN: GILA - SALT

4 FEB 1986

PROJECT: PHOENIX, ARIZONA AND VICINITY (INCLUDING NEW RIVER) (STAGE 2 AND REMAINING WORK)

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-I)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	METHOD OF FINANCING					
2	FEDERAL FUNDS					
3	ALLOCATIONS		45,057,000	17,700,000 2/		
4	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			10,000		
5	TOTAL FUNDS AVAILABLE FOR OBLIGATION			17,710,000		
6	APPROPRIATIONS REQUIRED				32,000,000	137,243,000
7						
8	NON-FEDERAL CONTRIBUTIONS					
9	CONTRIBUTIONS		1,280,000	900,000		
10	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			116,000		
11	TOTAL FUNDS AVAILABLE FOR OBLIGATION			1,016,000		
12	CONTRIBUTIONS REQUIRED				2,400,000	12,320,000
13						
14	NON-FEDERAL					
15	CASH CONTRIBUTIONS	16,900,000	1,157,000	1,023,000	2,400,000	12,320,000
16	OTHER COSTS	166,100,000	80,833,000	43,381,000	23,804,000	18,003,000
17	LANDS AND DAMAGES	(114,057,000)	(61,015,000)	(30,011,000)	(11,869,000)	(11,162,000)
18	RELOCATIONS	(46,029,000)	(19,818,000)	(13,050,000)	(9,210,000)	(3,951,000)
19	OTHER	(6,014,000)	(0)	(320,000)	(2,804,000)	(2,890,000)
20	TOTAL NON-FEDERAL COST	183,000,000	81,990,000	44,404,000	26,203,000	30,323,000
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31	1/ Includes $90,000 for real estate activities.					
32	2/ Includes $300,000 reduction assigned as savings and slippage.					
33						

EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: LOS ANGELES | REGION: LOWER COLORADO | BASIN: GILA - SALT | 4 FEB 1986

PROJECT: PHOENIX, ARIZONA AND VICINITY (INCLUDING NEW RIVER) (STAGE 2 AND REMAINING WORK)

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Corte Madera Creek, California (Continuing)

LOCATION: Corte Madera Creek and its tributaries drain an area of about 28 square miles in Marin County, California, and flow into the west side of San Francisco Bay about nine miles north of the Golden Gate Bridge.

AUTHORIZATION: 1962 and 1966 Flood Control Acts.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 2.1 to 1 at 3 1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1966) was 1.7 to 1. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Federal Cost		$14,000,000	
Estimated Non-Federal Cost		6,600,000	
Cash Contribution	$ 470,000		
Other Costs	6,130,000		
Total Estimated Project Cost		$20,600,000	
Allocations to 30 September 1985		$ 6,595,000	
Conference Allowance for FY 1986		600,000	
Allocation for FY 1986		2,400,000 1/	
Allocations to Date		$ 8,995,000	64
Allocation Requested for FY 1987		$ 2,000,000	79
Scheduled Balance to Complete After FY 1987		3,005,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Channels	75	Sep 1988
Entire Project	75	Sep 1988

PHYSICAL DATA	
Lower Corte Madera Creek Redredging:	450,000 Cubic Yards
Channel Enlargement and Riprap Levees:	3.0 Miles
Concrete Channel Improvements:	1.8 Miles

1/ Reflects transfer of $1,800,000 to the project.

Division: South Pacific

District: Sacramento

Region: California-South Pacific
Corte Madera Creek, California

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JUSTIFICATION: Corte Madera Creek Basin is primarily a residential area, suburban to San Francisco. The principal communities include Corte Madera, and Larkspur, with a combined population of about 20,000 (1985). Extensive flooding continues to occur through Ross Valley into the tidelands and includes the communities of Ross, Kentfield, Larkspur, Corte Madera and Greenbrae. The value of lands and improvements to be protected by the project is estimated to be $109,000,000. The project would provide a high degree of protection to residential, commercial and public property along Corte Madera Creek. Flooding has occurred along Corte Madera Creek in eight of the last thirty years. The 1958 flood resulted in one death by drowning. Since the project has not yet been completed up to Sir Francis Drake Boulevard, flood flows outflank the existing project improvements downstream and flooding has occurred along the completed reaches of the project in three of the last seven years. The most severe of these floods occurred in January 1982 and under current conditions would cause nearly $2.6 million in flood damages. It is estimated that the design flood would inundate almost 700 acres and, under present conditions of development, would cause damages estimated at $15,100,000 of which $13,300,000 would be prevented by the project. Redredging of the lower Corte Madera Creek has been made necessary by the buildup of nearly 5 feet of sediment that has been carried down and deposited during periods of high flows since the original dredging was completed in FY 1967. The removal of 450,000 cubic yards of sediment will restore the channel to project conditions. Average annual benefits are estimated at $1,580,000, all flood control.

FISCAL YEAR 1987: The requested amount of $2,000,000 will be applied as follows:

Continue Redredging of Lower Corte Madera Creek	$ 550,000
Initiate Channel Improvement Ross Valley Unit 4	1,100,000
Engineering and Design	250,000
Supervision and Administration	100,000
Total	$2,000,000

NON-FEDERAL COSTS: Local interests are required to: provide lands, easements and rights-of-way necessary for the construction of the project, including suitable areas for disposal of waste material; modify or relocate all bridges and utilities necessary for construction and maintenance of the project; hold and save the United States free from damages due to the construction works; maintain and operate the project after completion in accordance with regulations prescribed by the Secretary of the Army, and prevent encroachment on flood channels that would result in decreasing the effectiveness of the project for flood control; adjust all claims regarding water rights that might be affected by the project; and contribute in cash 1-1/2 percent of the Federal construction cost of the Ross Valley Unit. Estimated cost to local interests is as follows:

Lands and Damages	$4,390,000
Relocations	1,740,000
Cash Contribution	470,000
Total	$6,600,000

The annual cost to local interests for maintenance, operation and replacement is estimated at $150,000.

Corte Madera Creek, California

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STATUS OF LOCAL COOPERATION: The State of California approved state participation in the project by 1965 statute, Chapter 1388. Marin County Flood Control and Water Conservation District has provided numerous resolutions of local cooperation for all previous work. Marin County has provided rights-of-way, accomplished relocations, and furnished the cash contributions in advance of construction in each individual reach, and has indicated by letter dated 14 June 1983 that they will assume operation and maintenance of the Lower Corte Madera Creek Channel, upon completion of channel redredging. A Local Cooperation Agreement for redredging the lower reach of Corte Madera Creek was executed on 29 June 1985. The most recent indication of support for Ross Valley Unit 4 was by letter dated 13 December 1983 from the Marin County Board of Supervisors.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $14,000,000 is an increase of $1,700,000 from the latest estimate ($12,300,000) submitted to Congress. This change includes increases of $25,000 for higher price levels; $1,540,000 for increased dredging cost due to restricted access; and $185,000 for Engineering and Design and $50,000 Supervision and Administration due to reanalysis of requirements. These increases were partially offset by a decrease of $100,000 for estimated inflation through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement was filed with CEQ on 26 August 1974. A draft Supplemental Environmental Impact Statement was filed with EPA on 13 April 1979. An Environmental Assessment for redredging of Lower Corte Madera Creek was coordinated with Federal, State, County and local interests and a Finding of No Significant Impact was signed by the District Engineer 19 March 1985. The final Supplemental Environmental Impact Statement for Ross Valley Unit 4 is scheduled for submission to EPA in July 1986.

The provisions of Section 404 of the Clean Water Act have been met for redredging of Lower Corte Madera Creek by a Section 404(b)(1) Evaluation completed on 25 March 1985, a Public Notice issued on 25 March 1985, a Certification issued by the State of California on 8 May 1985, and the District Engineer's signature on the Finding of Compliance Statement on 19 March 1985. The provisions for Section 404 of the Clean Water Act are scheduled to be met for Ross Valley Unit 4 by a Section 404(b)(1) Evaluation in July 1986, a Public Notice issued in July 1986, a Certification from the State of California in August 1986, and the District Engineer's signature on the Finding of Compliance Statement in September 1986.

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OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1964, and for construction in FY 1966.

The local sponsors of the project, Marin County Flood Control and Water Conservation District, opposed construction of channel improvements upstream of the intersection of Sir Francis Drake Boulevard and Corte Madera Creek in Ross near the City of San Anselmo. This portion of the project has been reclassified to the "Inactive" category.

The original plan for Ross Valley Unit 4 consisting of an open concrete channel was to be constructed in 1972. It was delayed by litigation. Construction was further delayed by local residents opposing this plan since it did not preserve the existing natural creek environment. A floodwall plan was prepared in May 1980. However, further engineering and design was suspended when by letter dated 5 May 1980, Marin County notified the Corps of the county's inability to pay its share of the remaining work on the Corte Madera Creek project. Based on a letter dated 13 December 1983 from Marin County reaffirming its ability to sponsor the project, engineering and design for Ross Valley Unit 4 was reinitiated.

A judgment by the California Superior Court on 6 December 1983, ordered that Marin County pursue with the Federal Government construction of Ross Valley Unit 4 and levy a special tax assessment without necessity of Notice of Hearing or two-thirds vote of qualified electorate to provide funds for the project. This judgment was appealed by the City of Corte Madera and a court document filed 31 May 1985 states that the Marin County Flood Control and Water Conservation District can levy an assessment for completion of the project, including both redredging and Unit 4, without voter approval.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific

Project: Corte Madera Creek, California

District: Sacramento

	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	6,090 (Jul 64)		12,300 1/ (Oct 84)		14,000 1/ 2/
Reason for Change		(6,210)		(1,700) 2/	
a. Price Escalation		11,269		(-)75	
b. Design Changes		(-)585			
c. Additional Function Added Under General Authorization		385			
d. Authorized Modification		1,840		1,540 3/	
e. Post-Contract Award and Other Estimating Adjustments		1,355		235 4/	
f. Schedule Changes		(-)9,664			
g. Sundry		1,610			
h. Real Estate					

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes a reduction of $100 for adjustment of estimated inflation allowance through the construction period.
3/ Reflects increase for redredging contract due to restricted access to the waterway limiting the size and type of construction equipment.
4/ Increase of $185 for Engineering and Design and $50 for Supervision and Administration due to reanalysis of project requirements.

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	CHANNELS	11,510,000	4,613,000	2,460,000	1,680,000	2,757,000
2	ENGINEERING AND DESIGN	2,200,000	1,554,000	300,000	250,000	96,000
3	SUPERVISION AND ADMINISTRATION	760,000	335,000	118,000	100,000	207,000
4						
5	TOTAL COST (Fed Funds and					
6	Non-Fed Contrib)	14,470,000	6,502,000	2,878,000	2,030,000	3,060,000
7	Undelivered Orders		3,000	(-)3,000		
8	TOTAL OBLIGATIONS (Fed Funds and		6,505,000	2,875,000	2,030,000	3,060,000
9	Non-Fed Contrib)					
10						
11	FEDERAL FUNDS					
12	TOTAL COST	14,000,000	6,416,000	2,579,000	2,000,000	3,005,000
13	Undelivered Orders		3,000	(-)3,000		
14	TOTAL OBLIGATIONS		6,419,000	2,576,000	2,000,000	3,005,000
15						
16	NON-FEDERAL CONTRIBUTIONS					
17	TOTAL COST	470,000	86,000	299,000	30,000	55,000
18	Undelivered Orders (None)					
19	TOTAL OBLIGATIONS		86,000	299,000	30,000	55,000
20						
21	METHOD OF FINANCING					
22	FEDERAL FUNDS					
23	ALLOCATIONS		6,595,000	2,400,000 1/		
24	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			176,000		
25	TOTAL FUNDS AVAILABLE FOR OBLIGATION			2,576,000		
26	APPROPRIATIONS REQUIRED				2,000,000	3,005,000
27						
28						
29	1/ Reflects transfer of $1,800,000 to the project.					
30						
31						
32						
33						

EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF-SOUTH PACIFIC | BASIN: SAN FRANCISCO BAY | PROJECT: CORTE MADERA CREEK, CALIFORNIA

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	NON-FEDERAL					
2	CASH CONTRIBUTIONS	470,000	86,000	299,000	30,000	55,000
3	OTHER COSTS	6,130,000	3,580,000	2,150,000	400,000	0
4	LANDS AND DAMAGES	(4,390,000)	(2,850,000)	(1,540,000)	(0)	
5	RELOCATIONS	(1,740,000)	(730,000)	(610,000)	(400,000)	
6	OTHER	(0)	(0)	(0)	(0)	
7	TOTAL NON-FEDERAL COST	6,600,000	3,666,000	2,449,000	430,000	55,000
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EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF-SOUTH PACIFIC | BASIN: SAN FRANCISCO BAY | PROJECT: CORTE MADERA CREEK, CALIFORNIA

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APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

PROJECT: Dry Creek (Warm Springs) Lake and Channel, California (Continuing)

LOCATION: The project is located about 75 miles north of San Francisco on Dry Creek, a tributary of the Russian River, in Sonoma County, California.

AUTHORIZATION: 1962 Flood Control Act and Section 95 of the 1974 Water Resources Development Act (Public Law 93-251)

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because the project is nearing completion. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1967) was 1.5 to 1. The benefit-cost ratio is based on the benefits derived as a result of this project being the next added unit in a system which also includes the completed Coyote Valley Dam with downstream channel improvements.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost
Estimated Total Appropriation Requirement	$343,000,000	
Future Non-Federal Reimbursement	-94,500,000	
Estimated Federal Cost (Ultimate)		$248,500,000
Estimated Non-Federal Cost		94,620,000
Reimbursement: Water Supply	94,500,000	
Other Costs	120,000	
Total Estimated Project Cost		$343,120,000
Allocations to 30 September 1985		$284,835,000
Conference Allowance for FY 1986		11,800,000
Allocation for FY 1986		8,600,000 1/
Allocations to Date		$293,435,000 86
Allocation Requested for FY 1987		$11,000,000 89
Scheduled Balance to Complete After FY 1987		3,400,000
Unscheduled Balance to Complete After FY 1987		35,165,000

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Lands and Damages	98	Mar 1986
Relocations	80	Jan 1988
Reservoir	80	Sep 1986
Dam and Appurtenances	100	Dec 1984
Fish and Wildlife Facilities	96 2/	Sep 1986
Roads	76	Sep 1986
Recreation Facilities	25 2/	Sep 1988
Bank Stabilization	86	Mar 1986
Cultural Resources Preservation	100	Mar 1984
Buildings, Grounds and Utilities	81	Sep 1986
Permanent Operating Equipment	100	Dec 1985
Dam Closure		Oct 1982
Entire Project	93	Sep 1988

1/ Reflects $1,200,000 reduction assigned as savings and slippage and $2,000,000 transfer from the project.
2/ See OTHER INFORMATION.

Division: South Pacific

District: Sacramento

Region: California-South Pacific

Dry Creek (Warm Springs) Lake and Channel, California

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PHYSICAL DATA

Dam:
Type - Earthfill
Height - 319 feet
Crest Length - 3,000 feet

Spillway:
Type - Uncontrolled Overflow
Width - 100 feet
Design Discharge - 28,700 c.f.s.

Dry Creek Channel Improvements:
Bank protection and channel clearing at critical locations, design capacity 7,500 c.f.s.

Outlet Works:
Type - Gate Controlled, in a 14.5 ft. diameter tunnel
Capacity - 7,000 c.f.s.

Relocations:
Roads - About 34 Miles ($36,075,000)
Cemeteries and Utility Lines ($520,000)

Drainage Area:
(Above Dam) 130 square miles

Storage Capacity:

Flood Control.....	130,000 ac-ft.
Water Supply.....	212,000 ac-ft.
Minimum Pool for Fishery Enhancement.....	13,000 ac-ft.
Silt Reservation...	26,000 ac-ft.
Total	381,000 ac-ft.

Lands and Damages:
Acres - 17,615
Type - Predominantly ranches
Improvements - Farms, vineyards and orchards

JUSTIFICATION: This project provides flood p otection to about 20,500 acres of land in the lower Russian River Basin. The flood plain area is devoted to agriculture (orchards, vineyards and irrigated pasture) and recreation, with 15 resort communities along the lower reaches of the river containing numerous summer and permanent homes. Floods of December 1964 and January 1966 caused estimated damages in the lower Russian River Basin of $5,300,000 and $1,900,000 respectively. Had Dry Creek Dam been constructed at the time of those floods, damages amounting to $2,600,000 and $1,200,000 could have been prevented. Under present conditions with the project in operation, damages of about $12,000,000 and $5,200,000 would be prevented. The improvement reduces the average annual flood damages in the project area by about two-thirds. Estimated flood damages prevented by the project on the Russian River during the 1983-84 winter flood season amounted to $12,600,000. Flood protection provided will enhance agricultural land values by enabling higher land utilization, including production of higher income crops, and conversion to low density summer residential use. The project will also provide about 115,000 acre-feet of firm annual yield for municipal and industrial use in the service area, essentially Sonoma and Marin Counties. Sonoma County experienced a critical water supply shortage during the 1975-1977 drought and instituted mandatory water rationing at that time. The completed Dry Creek project will alleviate recurrence of this problem by providing additional water supply storage. Average annual benefits are as follows:

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Benefits	Amount (1 October 1985)
Flood Control	$ 9,137,000
Water Supply	6,040,000
General Recreation	4,010,000
Fish and Wildlife	1,400,000
Area Redevelopment	1,213,000
	$21,800,000

FISCAL YEAR 1987: The requested amount of $11,000,000 will be applied as follows:

Complete Buzzard Rock Recreation Area	$3,400,000
Complete Yorty Creek Beach Recreation Area	1,400,000
Initiate Rockpile Road Upgrade	5,230,000
Initiate and complete Bridge Repair	300,000
Engineering and Design	210,000
Supervision and Administration	460,000
Total	$11,000,000

NON-FEDERAL COSTS: The investment required of local interests for construction of the authorized project is estimated at $94,620,000 broken down as follows:

Reimbursement - Water Supply	$94,500,000
Lands and Damages (Channel Improvement)	120,000
Total	$94,620,000

The estimated annual cost to local interests for maintenance and operation of the channel improvements is $74,900 and $358,000 is the estimated cost to local interests for that portion of the overall operation, maintenance and replacement costs allocated to municipal and industrial water supply. In addition, local interests have expended approximately $1,000,000 to provide partial flood protection in the project area; have constructed facilities at a cost of approximately $20,000,000 to distribute water from the completed Coyote Valley Reservoir; and plan to construct additional facilities to assure full utilization of the initial water supply and future additional water supply to be provided by Dry Creek storage. These facilities will be completed in 1994. Sonoma County also plans to construct supplemental water transmission facilities. Sonoma County has passed several bond issues totaling nearly $20,000,000 for their distribution facilities. Marin County passed a bond issue for $11,500,000 in 1970 for their distribution facilities, and the North Marin Water District passed a $4,000,000 bond issue in November 1973 to connect with Sonoma County facilities.

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In addition a 25 year lease has been awarded to private concessionaires to develop a marina, campgrounds, equestrian area and associated support facilities valued at $4 million.

STATUS OF LOCAL COOPERATION: Assurances of local cooperation were provided by Sonoma County Water Agency (formerly Sonoma County Flood Control and Water Conservation District) Resolutions DR 00793-1 adopted 25 September 1961 and DR 4770-1 adopted 17 December 1962. On 5 August 1974, the Board of Directors of the Sonoma County Water Agency adopted Resolution DR 45759 which acknowledged an enforceable obligation for repayment of construction costs associated with project optimization in accordance with the formula in the original water supply contract executed on 6 January 1965. The original contract was modified by agreement between the Department of the Army and the Sonoma County Water Agency on 1 October 1982.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $343,000,000 is the same as the last estimate submitted to Congress. Net changes resulted in decreases of $785,000 for adjustments in the estimated inflation allowance through the construction period; $3,100,000 for deletion of Warm Springs Beach recreation area due to poor site conditions and unjustifiably high cost of proposed facilities; $600,000 for reduced design scope of fire access roads; $955,000 was for adjustment in final contract costs and $175,000 due to reduced contingencies for Phase I boat launch facilities; and $1,210,000 for vegetation management program due to decreased unit costs and quantities. These decreases were offset by increases of $1,400,000 for addition of fish hatchery expansion; $700,000 for addition of sanitary facilities and associated utilities at the boat ramp area; $930,000 for increased quantities due to repair of the slide at the boat ramp; $440,000 due to changed site conditions at Yorty Creek Beach area; $280,000 for settlement of real estate payments; $900,000 for engineering and design due to reanalysis of remaining requirements; $400,000 for a higher cost than anticipated for construction of project administration building modifications; and $1,775,000 for increase in contingencies for remaining recreation facilities.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement was submitted to CEQ on 10 December 1973. A Final Supplement to the Environmental Impact Statement was filed with CEQ 17 September 1976 based on additional studies required by the District Court on dynamic response analysis for seismic conditions, water quality and archeology. An Environmental Assessment and a Finding of No Significant Impact for the Fish Hatchery Expansion is scheduled to be signed by the District Engineer in May 1986 and filed with EPA in June 1986.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation Report signed by the District Engineer on 4 April 1977.

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OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1964, and for construction in FY 1967.

Remaining recreation facilities are not scheduled pending development of cost sharing agreements with local interests for construction and non-Federal operation and maintenance, consistent with projects for which recreation facilities are being constructed under the provisions of the Federal Water Project Recreation Act of 1965 (PL 89-72), as amended.

The project for Russian River, Dry Creek, California was modified by Section 95 of the 1974 Water Resources Development Act (Public Law 93-251) to compensate for fish losses on the Russian River which may be attributed to the operation of the Coyote Dam component of the project, through measures such as possible expansion of the capacity of the fish hatchery at the Dry Creek (Warm Springs) Lake and Channel component of the project. Engineering and design for the Fish Hatchery Expansion element of Dry Creek (Warm Springs) Lake and Channel is scheduled to be completed in September 1986. Construction of the Fish Hatchery is unscheduled at this time.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific Project: Dry Creek (Warm Springs) Lake and Channel, California
District: Sacramento

	Estimates Presented to Congress ($1,000)				
	Original Baseline	Cumulative Changes	Last	Incremental Change	Current
	(1)	(2)	(3)	(4)	(5)
Federal Cost (Price Level)	51,000 (Jul 65)		343,000 1/		343,000
Reason for Change		(292,000)		(0) 2/	
a. Price Escalation		122,113		(-)785	
b. Design Changes		47,913		(-)1,880 3/	
c. Additional Function Added Under General Authorization		25,585			
d. Authorized Modification		2,940			
e. Post-Contract Award and Other Estimating Adjustments		75,233		2,385 4/	
f. Schedule Changes		3,851			
g. Sundry		12,995			
h. Real Estate		1,370		280 5/	

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes $785 reduction for estimated inflation allowance through the construction period.
3/ Reflects decrease of $3,100 for deletion of recreation facilities at Warm Springs Beach recreation area due to poor site conditions and unjustifiably high cost of proposed facilities; $600 for reduced design scope of fire access roads and $1,210 for vegetation management program due to decreased unit costs and quantities. These decreases were partially offset by increases of $1,400 for addition of the fish hatchery expansion, $700 for addition of the sanitary facilities and associated utilities at the boat ramp area; and $930 for increased quantities due to repair of the slide at the boat ramp.
4/ Reflects increase of $440 because of changed site conditions at Yorty Creek Beach Area; $900 increase for Engineering & Design due to reanalysis of remaining requirements; $400 for a higher cost than anticipated for construction of project administration building modifications, and $1,775 for increase in contingencies for remaining recreation facilities. These increases were partially offset by decreases of $175 for reduced contingencies for Phase I boat launch facilities and $955 for adjustment in final contract costs.
5/ Increase of $280 based on settlement of real estate deficiency payments.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	LAND AND DAMAGES	17,970,000	13,750,000	320,000		3,900,000
2	RELOCATIONS	36,595,000	28,525,000		5,530,000	2,540,000
3	RESERVOIR	3,200,000	2,795,000	405,000		
4	DAMS	168,955,000	168,955,000			
5	FISH & WILDLIFE FACILITIES	12,020,000	10,520,000	100,000		1,400,000
6	ROADS	200,000	100,000	100,000		
7	RECREATION FACILITIES	41,595,000	4,260,000	4,760,000	5,300,000	27,275,000
8	BANK STABILIZATION	3,040,000	2,165,000	175,000		700,000
9	CUL RES PRESERVATION	2,770,000	2,630,000			140,000
10	BLDGS GNDS UTILITIES	2,960,000	1,275,000	1,685,000		
11	PERM OPER EQUIPMENT	1,370,000	870,000	100,000		400,000
12	ENGINEERING AND DESIGN	31,450,000	29,250,000	1,120,000	210,000	870,000
13	SUPERVISION AND ADMINISTRATION	20,875,000	18,247,000	928,000	460,000	1,340,000
14						
15	TOTAL COST (Fed Funds and					
16	Non-Fed Contrib)	343,000,000	283,342,000	9,593,000	11,500,000	38,565,000
17	Undelivered Orders		1,308,000	-808,000	-500,000	
18	TOTAL OBLIGATIONS (Fed Funds and					
19	Non-Fed Contrib)		284,650,000	8,785,000	11,000,000	38,565,000
20						
21	FEDERAL FUNDS					
22	TOTAL COST	343,000,000	283,342,000	9,593,000	11,500,000	38,565,000
23	Undelivered Orders		1,308,000	-808,000	-500,000	
24	TOTAL OBLIGATIONS		284,650,000	8,785,000	11,000,000	38,565,000
25						
26	NON-FEDERAL CONTRIBUTIONS					
27	TOTAL COST	0				
28	Undelivered Orders (None)					
29	TOTAL OBLIGATIONS					
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EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF-SOUTH PACIFIC | BASIN: NORTH COASTAL | PROJECT: DRY CREEK (WARM SPRINGS) LAKE & CHANNEL, CALIFORNIA

4 FEB 1986

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REPORTS CONTROL SYMBOL DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-I)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	METHOD OF FINANCING					
2	FEDERAL FUNDS					
3	ALLOCATIONS		284,835,000	8,600,000 1/		
4	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			185,000		
5	TOTAL FUNDS AVAILABLE FOR OBLIGATION			8,785,000		
6	APPROPRIATIONS REQUIRED				11,000,000	38,565,000
7						
8	NON-FEDERAL					
9	CASH CONTRIBUTIONS	0				120,000
10	OTHER COSTS	120,000				(120,000)
11	LANDS AND DAMAGES	(120,000)				(0)
12	RELOCATIONS	(0)				(0)
13	OTHER	(0)				120,000
14	TOTAL NON-FEDERAL COST	120,000				
15						
16						
17						
18	1/ Reflects a $1,200,000 reduction assigned as savings and slippage and $2,000,000 transfer from the project.					
19						
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EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF-SOUTH PACIFIC | BASIN: NORTH COASTAL | PROJECT: DRY CREEK (WARM SPRINGS) LAKE & CHANNEL, CALIFORNIA

4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Fairfield Vicinity Streams, California (Continuing)

LOCATION: The project is located in, and in the vicinity of, the city of Fairfield, Solano County, California.

AUTHORIZATION: Section 201 of the 1965 Flood Control Act (Authorized 1970). Further Continuing Appropriations Act for Fiscal Year 1986 (Public Law 99-190), 19 December 1985.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 1.9 to 1 at 8-1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 1.13 to 1. The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Federal Cost		$ 9,630,000	
Estimated Non-Federal Cost		11,670,000	
Cash Contribution	$ 1,370,000		
Other Costs	10,300,000		
Total Estimated Project Cost		$ 21,300,000 1/	
Allocations to 30 September 1985		$ 1,162,000	
Conference Allowance for FY 1986		0	
Potential Allocation for FY 1986		705,000 2/	
Potential Allocations through FY 1986		$ 1,867,000	19
Allocation Requested for FY 1987		$ 3,000,000	51
Scheduled Balance to Complete After FY 1987		4,763,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Relocations	1/	May 1989
Channels		May 1989
Recreation Facilities		May 1989
Permanent Operating Equipment		Sep 1989
Entire Project		Sep 1989

1/ See OTHER INFORMATION
2/ Based on the current project schedule.

Division: South Pacific District: Sacramento Region: California-South Pacific

4 FEB 1986

Fairfield Vicinity Streams, California

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PHYSICAL DATA

Relocations:
SPRR Bridge on Laurel Creek ($230,000)
SPRR Bridge on Ledgewood Creek ($970,000)

Channel Improvements:
Unlined Earth Channel - 4.1 miles
Rock Lined Channel - 1.1 miles

Recreation Facilities:
Bicycle Trails - 4.3 miles
Staging Area - 1

Design Capacities:
Ledgewood Creek - 1,310 c.f.s to 3,750 c.f.s.
Pennsylvania Ave Creek Diversion - 360 c.f.s.
Union Ave Creek Diversion - 180 c.f.s. to 900 c.f.s.
Laurel Creek - 2,600 c.f.s. to 3,700 c.f.s.
Laurel Creek Diversion Stub - 700 c.f.s.
McCoy Creek - 2,000 c.f.s. to 3,900 c.f.s.

JUSTIFICATION: The project will provide flood protection to about 3,900 acres of land in and adjacent to the city of Fairfield that is now subject to frequent damaging flood inundations. The present value of improvements in the project flood plain is $255,000,000. Since 1940, Fairfield has been growing at a rate greatly exceeding that of Solano County, the State of California, or the United States. It is estimated that by 2037 the flood plain will be converted to residential and other urban uses. Future developments will compound the current flood problems. Under current conditions of development, repetition of the December 1955 flood, the maximum flood of record, would cause damages of about $2,030,000, all preventable by the project. The estimated average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$ 2,340,000
Recreation	90,000
Area Redevelopment	300,000
	$ 2,780,000 1/

1/ See OTHER INFORMATION.

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FISCAL YEAR 1987: The requested amount of $3,000,000 will be applied as follows:

Complete McCoy Creek, Laurel Creek East-West Diversion Channel	$ 300,000
Initiate SPRR Bridge-Laurel Creek Relocation	170,000
Initiate Laurel Creek North-South Diversion Channel	1,800,000
Initiate Union Avenue Diversion Channel	200,000
Engineering and Design	270,000
Supervision and Administration	260,000
Total	$3,000,000

NON-FEDERAL COSTS: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and material disposal areas, presently estimated at $3,200,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $7,100,000; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $270,000; and bear all costs of operation, maintenance, and replacement of recreation facilities, presently estimated at $30,000 annually; pay 5 percent of the costs allocated to flood control, presently estimated at $1,100,000, and bear all costs of operation, maintenance, and replacement of flood control facilities, presently estimated at $65,000 annually. Local interests have also agreed to make all required payments and voluntary contributions concurrently with project construction. (See OTHER INFORMATION)

STATUS OF LOCAL COOPERATION: The cities of Fairfield and Suisun in April 1982 affirmed their support and intent to provide the necessary assurances of local cooperation for a modified version of the authorized project from 200-year to 100-year flood protection. The State of California Reclamation Board has provided a letter of intent to the Assistant Secretary of the Army, dated 8 November 1982, to cooperate with the Federal Government to begin construction of the project. In accordance with the Fiscal Year 1985 Supplemental Appropriations Act (Public Law 99-88), a written agreement satisfying all the requirements of Section 221, Flood Control Act of 1970 (Public Law 91-611), will be obtained from the non-Federal sponsor and executed prior to 30 June 1986.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $9,630,000 is a decrease of $4,070,000 from the latest estimate ($13,700,000) submitted to Congress. This change includes increases of $600,000 based on higher price levels to 1 October 1985; $630,000 for an estimated inflation allowance from 1 October 1985 through the construction period; and $560,000 for Engineering and Design and $100,000 for Supervision and Administration based on reanalysis of requirements. These were partially offset by decreases of $185,000 for a reduced recreation plan due to elimination of 0.3 miles of bicycle and hiking trails and project modification to reduce the level of protection from 200-year to 100-year that resulted in decreases of the following: $1,825,000 due to shorter bridge spans of the Southern Pacific Railroad crossings over Ledgewood and Laurel Creeks and the deletion of one of the railroad bridges

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over Ledgewood Creek; $3,450,000 due to decrease in channel excavation quantities; and $500,000 due to deletion of levee construction performed by local interests along Ledgewood and McCoy Creeks and elimination of modifications to Pennsylvania Avenue Detention Basin. (See OTHER INFORMATION)

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Final Environmental Impact Statement was submitted to CEQ on 5 April 1976. An Environmental Assessment of the modified project was submitted to EPA on 15 December 1985.

The provisions of Section 404 of the Clean Water Act will be met by a Section 404(b)(1) Evaluation on 24 July 1984, a Public Notice issued on 3 August 1984, a Certification from the State of California on 18 December 1985, and the District Engineer's signature on the Section 404 Report on 20 December 1985.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1973 and allocated in FY 1974. Funds to initiate construction was appropriated in the FY 1985 Supplemental Appropriations Act.

Engineering studies to modify the authorized project from 200-year to 100-year level of protection will be completed in March 1986.

Section 135 of the Further Continuing Appropriations Act for Fiscal Year 1986 (Public Law 99-190), December 19, 1985 contained the following authorization language: "The Secretary shall include as part of the non-Federal contribution of the project for flood control, Fairfield Vicinity Streams, California, authorized in accordance with Section 201 of the Flood Control Act of 1965, the cost of any work carried out by non-Federal interests on the project after December 31, 1973, and before the date of the enactment of this joint resolution, if the Secretary determines such work is reasonably compatible with the project. Costs and benefits resulting from such work shall continue to be included for purposes of determining the economic feasibility of the project." The Corps of Eng neers is complying with this directive and presently is evaluating the costs and benefits of all completed works by non-Federal interests after December 31, 1973, to determine the compatibility of these works to the project. Upon completion of the evaluation, project costs, benefits and cost sharing requirements will be adjusted accordingly. This evaluation is expected to be completed by May 15, 1986.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: Sacramento

Project: Fairfield Vicinity Streams, California

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	13,700 (Oct 83)		13,700 (Oct 83)		9,630 1/
Reason for Change				(-)(4,070) 1/	
a. Price Escalation					
b. Design Changes				1,230	
c. Additional Function Added Under General Authorization					
d. Authorized Modification					
e. Post-Contract Award and Other Estimating Adjustments				(-)5,960 2/ 660 3/	
f. Schedule Changes					
g. Sundry					
h. Real Estate					

1/ Includes $630 allowance for estimated inflation from 1 October 1985 through the construction period.
2/ Reflects decreases of $185 for reduced recreation plan due to elimination of 0.3 miles of bicycle and hiking trails, $1,825 due to shorter bridge spans of the Southern Pacific Railroad crossing over Ledgewood and Laurel Creeks and the deletion of one of the railroad bridges over Ledgewood Creek, $3,450 due to decreases in channel excavation quantities, and $500 due to deletion of levee construction performed by local interests along Ledgewood and McCoy Creeks and elimination of modifications to Pennsylvania Avenue Detention Basin.
3/ Inlcudes $560 for Engineering and Design and $100 for Supervision and Administration based on reanalysis of requirements.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM (a)	PROJECT COST ESTIMATE (b)	TOTAL TO 30 SEP 1985 (c)	CURRENT FY 1986 (d)	BUDGET FY 1987 (e)	BALANCE TO COMPLETE AFTER FY 1987 (f)
1	RELOCATIONS	1,200,000			200,000	1,000,000
2	CHANNELS	6,200,000		500,000	2,680,000	3,020,000
3	RECREATION FACILITIES	400,000				400,000
4	PERM OPER EQUIPMENT	110,000				110,000
5	ENGINEERING AND DESIGN	2,040,000	1,025,000	320,000	320,000	375,000
6	SUPERVISION AND ADMINISTRATION	1,050,000	122,000	200,000	300,000	428,000
7						
8	TOTAL COST (Fed Funds and					
9	Non-Fed Contrib)	11,000,000	1,147,000	1,020,000	3,500,000	5,333,000
10	Undelivered Orders (None)					
11	TOTAL OBLIGATIONS (Fed Funds and					
12	Non-Fed Contrib)		1,147,000	1,020,000	3,500,000	5,333,000
13						
14	FEDERAL FUNDS					
15	TOTAL COST	9,630,000	1,147,000	720,000	3,000,000	4,763,000
16	Undelivered Orders (None)					
17	TOTAL OBLIGATIONS		1,147,000	720,000	3,000,000	4,763,000
18						
19	NON-FEDERAL CONTRIBUTIONS					
20	TOTAL COST	1,370,000		300,000	500,000	570,000
21	Undelivered Orders (None)					
22	TOTAL OBLIGATIONS					
23						
24	METHOD OF FINANCING					
25	FEDERAL FUNDS					
26	ALLOCATIONS		1,162,000	705,000 1/		
27	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			15,000		
28	TOTAL FUNDS AVAILABLE FOR OBLIGATION			720,000		
29	APPROPRIATIONS REQUIRED				3,000,000	4,763,000
30						
31						
32	1/ Based on the current project schedule.					
33						

EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF-SOUTH PACIFIC | BASIN: SAN FRANCISCO BAY | PROJECT: FAIRFIELD VICINITY STREAMS, CALIFORNIA

4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	NON-FEDERAL					
2	CASH CONTRIBUTIONS	1,370,000		300,000	500,000	570,000
3	OTHER COSTS	10,300,000		2,700,000	4,700,000	2,900,000
4	LANDS AND DAMAGES	(3,200,000)		(700,000)	(1,700,000)	(800,000)
5	RELOCATIONS	(7,100,000)		(2,000,000)	(3,000,000)	(2,100,000)
6	OTHER	(0)		(0)	(0)	(0)
7	TOTAL NON-FEDERAL COST	11,670,000		3,000,000	5,200,000	3,470,000
8						
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EFFECTIVE DATE: 1 JAN 86

DIVISION: SOUTH PACIFIC

DISTRICT: SACRAMENTO

REGION: CALIF-SOUTH PACIFIC

BASIN: SAN FRANCISCO BAY

PROJECT: FAIRFIELD VICINITY STREAMS, CALIFORNIA

4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Lower San Joaquin River, California (Continuing)

LOCATION: The project is located on the San Joaquin River between Stockton and Friant Dam, near Fresno, California, a distance of about 225 miles.

AUTHORIZATION: 1944 Flood Control Act and 1983 Supplemental Appropriations Act (Public Law 98-63).

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified. The benefit-cost ratio for the Fiscal Year for which Congress appropriated initial construction funds (FY 1956) was 1.3 to 1.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
-ORIGINAL PROJECT-			
Actual Federal Cost		$12,976,000	
Actual Non-Federal Cost		5,000,000 1/	
Cash Contribution	$ 0		
Other Costs	5,000,000		
Total Actual Original Cost		$17,976,900	
-SNAGGING AND CLEARING			
Estimated Federal Cost		$ 5,600,000	
Estimated Non-Federal Cost		1,400,000	
Cash Contribution	0		
Other Costs	1,400,000		
Total Estimated Cost		7,000,000	
Total Estimated Project Cost		$24,976,000	
Federal Allocations to 30 September 1985		$15,626,000	
Conference Allowance for FY 1986		2,900,000	
Allocation for FY 1986		500,000 2/	
Allocations to Date		$16,126,000	87
Allocation Requested for FY 1987		$1,500,000	95
Scheduled Balance to Complete After FY 1987		950,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS: (1 Jan 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Original Project completed prior to 30 September 1972	100	
Snagging and Clearing	20	Sep 1988
Entire Project	95	Sep 1988

1/ Excludes prior Non-Federal costs for construction of channel and levee improvements upstream from Merced River in lieu of acquiring flowage easements.

2/ Reflects $2,400,000 reduction assigned as savings and slippage.

Division: South Pacific

District: Sacramento

Region: California-South Pacific
Lower San Joaquin River, California

4 FEB 1985

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PHYSICAL DATA

ORIGINAL PROJECT

Levees: Average height - 12 feet
Length - 96 miles
Pumping Plants: 3 - Capacity: 1-202 c.f.s.
1-130 c.f.s.
1-30 c.f.s.

Channels: [illegible] channel clearing
Channel St[illegible]ation: 5 spur dikes
Bank Protec[illegible]: 13 miles
Navigation C[illegible]: 1-16 ft by 20 ft opening (Wetherbee Lake)

SNAGGING AND CLEARING

Channels: Sandbar Removal (301,000 c.y.)
Cross-Section Restoration (571,000 c.y.)
Vegetation Removal (297 acres)

JUSTIFICATION: The project comprises modification and extension of the existing Lower San Joaquin River project by providing snagging and clearing on the San Joaquin River from Stockton, California upstream to Friant Dam. Flooding along the San Joaquin River has inundated thousands of acres of farmland. The most recent flooding occurred in January 1983 and caused estimated damages of $10 million. The major contributing factor to the flooding is the deterioration of the river channel and inadequate levees, as well as erosion within the river system and deposition of silt in the lower portions of the San Joaquin River which has greatly diminished the channel capacity.

FISCAL YEAR 1987: The requested amount of $1,500,000 will be used as follows:

Initiate and Complete Snagging and Clearing - Middle River and San Joaquin River (Old River to Stanislaus River)	$600,000
Initiate and Complete Snagging and Clearing - San Joaquin River (Stanislaus River to Merced River)	690,000
Engineering and Design	140,000
Supervision and Administration	70,000
Total	$1,500,000

NON-FEDERAL COSTS: Local interests provided all lands, easements, rights-of-way, and relocations for construction of the completed project and have maintained and operated the project since completion. A comparison of the actual cost for the completed project and the estimated costs to the local sponsor of complying with the requirements for the snagging and clearing portion of the project is as follows:

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	Completed Project	Snagging and Clearing
Lands and Damages	$2,400,000	$1,400,000
Relocations	2,600,000	0
Total	$5,000,000	$1,400,000

Local interests are also required to maintain and operate the snagging and clearing portion of the project. The estimated annual costs for operation and maintenance are $500,000.

STATUS OF LOCAL COOPERATION: The State of California Reclamation Board, the local sponsor, provided the requirements of local cooperation for the completed portion of the project. On 29 September 1984 the California State Legislature by State Law AB 3397 granted authority to the Reclamation Board to act as the non-Federal sponsor. In this law, the State agreed to "provide for the mitigation of the impact of the project with the objective of providing a net long term enhancement of the riparian habitat and fishery in the project area". In conformance with Section 221 of the Flood Control Act of 1970, Public Law 91-611, a written agreement for the Eastside Bypass at the San Joaquin River was executed on 17 October 1984. A Local Cooperation Agreement, in accordance with Section 221, for the remainder of the project will be obtained from the local sponsor prior to initiation of further construction and is scheduled for execution in June 1987.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $18,576,000 is an increase of $600,000 from the latest estimate ($17,976,000) submitted to Congress (FY 1983). This change includes increases of $200,000 based on higher price levels to 1 October 1985 and $400,000 for an estimated inflation allowance from 1 October 1985 through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: An Environmental Assessment and Finding of No Significant Impact for the Eastside Bypass reach was completed 21 September 1984. A draft Environmental Impact Statement was provided for review to pertinent Federal and State agencies and interested groups and individuals on 13 May 1985, and the final Environmental Impact Statement is scheduled for submittal to EPA in August 1986.

The provisions of Section 404 of the Clean Water Act are scheduled to be met by a Section 404(b) Evaluation in March 1986, a Public Notice issued in March 1986, a Certification from the State of California in May 1986, and the District Engineer's signature on the Finding of Compliance in June 1986.

OTHER INFORMATION: Funds to initiate construction were appropriated in FY 1956. Construction of the existing project was completed in September 1972 at a total project cost of $17,976,000. Funds to initiate Snagging and Clearing were appropriated in FY 1984.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: Sacramento

Project: Lower San Joaquin River, California

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	10,700 (Jul 55)		17,976 (Oct 83)		18,576 2/
Reason for Change					
a. Price Escalation		(7,276)		(600) 2/	
b. Design Changes		2,185		600	
c. Additional Function Added Under General Authorization		2,631			
d. Authorized Modification		5,000 1/			
e. Post Contract Award and Other Estimating Adjustments		(-)2,540			
f. Schedule Changes					
g. Sundry					
h. Real Estate					

1/ Additional authorization 1983 Supplemental Appropriations Act (Public Law 98-63) for including Snagging and Clearing on the San Joaquin River between Stockton, California and Friant Dam.
2/ Includes $400 allowance for estimated inflation from 1 October 1985 through the construction period.

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REPORTS CONTROL SYMBOL DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	CHANNELS	14,286,000	12,146,000		1,290,000	850,000
2	ENGINEERING AND DESIGN	2,960,000	2,271,000	499,000	140,000	50,000
3	SUPERVISION AND ADMINISTRATION	1,330,000	1,130,000	80,000	70,000	50,000
4						
5	TOTAL COST (Fed Funds and					
6	Non-Fed Contrib)	18,576,000	15,547,000	579,000	1,500,000	950,000
7	Undelivered Orders		59,000	-59,000		
8	TOTAL OBLIGATIONS (Fed Funds and					
9	Non-Fed Contrib)		15,606,000	520,000	1,500,000	950,000
10						
11	FEDERAL FUNDS					
12	TOTAL COST	18,576,000	15,547,000	579,000	1,500,000	950,000
13	Undelivered Orders		59,000	-59,000		
14	TOTAL OBLIGATIONS		15,606,000	520,000	1,500,000	950,000
15						
16	NON-FEDERAL CONTRIBUTIONS					
17	TOTAL COST	0				
18	Undelivered Orders (None)					
19	TOTAL OBLIGATIONS					
20						
21	METHOD OF FINANCING					
22	FEDERAL FUNDS					
23	ALLOCATIONS		15,626,000	500,000 1/		
24	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			20,000		
25	TOTAL FUNDS AVAILABLE FOR OBLIGATION			520,000		
26	APPROPRIATIONS REQUIRED				1,500,000	950,000
27						
28						
29	1/ Reflects $2,400,000 reduction assigned as savings and slippage.					
30						
31						
32						
33						

EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF - SOUTH PACIFIC | BASIN: SAN JOAQUIN | PROJECT: LOWER SAN JOAQUIN RIVER, CALIFORNIA

4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	NON-FEDERAL					
2	CASH CONTRIBUTIONS	0				
3	OTHER COSTS	6,400,000	5,000,000		1,000,000	400,000
4	LANDS AND DAMAGES	(3,800,000)	(2,400,000)		(1,000,000)	(400,000)
5	RELOCATIONS	(2,600,000)	(2,600,000)		(0)	(0)
6	OTHER	(0)	(0)		(0)	(0)
7	TOTAL NON-FEDERAL COST	6,400,000	5,000,000		1,000,000	400,000
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EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF-SOUTH PACIFIC | BASIN: SAN JOAQUIN | PROJECT: LOWER SAN JOAQUIN RIVER, CALIFORNIA

4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

PROJECT: Merced County Streams, California (Continuing)

LOCATION: The project is located in Merced County in the vicinity of the city of Merced, California, on the streams draining from the Mariposa County foothills of the Sierra Nevada into Merced County. The streams lie easterly of, and drain into, the San Joaquin River between Chowchilla River on the south and Merced River on the north.

AUTHORIZATION: 1970 Flood Control Act

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 1.2 to 1 at 8-1/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 1.16 to 1. The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Federal Cost		$57,900,000	
Estimated Non-Federal Cost		46,100,000	
Cash Contribution	$21,100,000		
Other Costs	25,000,000		
Total Estimated Project Cost		$104,000,000	
Allocations to 30 September 1985		$ 4,570,000	
Conference Allowance for FY 1986		0	
Potential Allocation for FY 1986		1,700,000 1/	
Potential Allocations through FY 1986		$ 6,270,000	11
Allocation Requested for FY 1987		$ 3,000,000	16
Scheduled Balance to Complete After FY 1987		48,630,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Lands and Damages	Not Started	Mar 1988
Relocations		Sep 1992
Reservoirs		May 1991
Dams		May 1991
Fish and Wildlife		Sep 1992
Roads		Sep 1991
Channels		Sep 1992
Levees		Sep 1992
Recreation Facilities		Sep 1992
Cultural Resources		May 1988
Permanent Operating Equipment		Sep 1991
Entire Project		Sep 1992

1/ Based on the current project schedule.

Division: South Pacific

District: Sacramento

4 FEB 1986

Region: California-South Pacific
Merced County Streams, California

1552

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PHYSICAL DATA

Castle Dam and Lake
Dam: Type - Impervious Core
Height - 52.5 feet
Length - 2,250 feet

Dikes: Type - Homogeneous earthfill Length - 4,090 feet

Spillway: Type - Ungated, concrete low ogee spillway
Crest width - 180 feet
Capacity - 3,900 c.f.s.

Lake Capacity: Flood Control storage - 6,400 ac-ft

Lands and Damages: Acres - 1,219
Type - grazing and orchards
Improvements - Rural dwellings and ranch buildings

Bear Dam and Lake
Dam: Type - Impervious Core
Height - 150 feet
Length - 3,100 feet

Spillway: Type - Ungated ogee converging spillway with stilling basin
Crest width - 185 feet converging to 120 ft
Capacity - 27,000 c.f.s.

Lake Capacity: Flood Control
Storage - 32,500 ac-ft

Lands and Damages: Acres - 310
Type - grazing
Improvements - None

Bear Creek Stream Group
Channels: 33.4 miles

Levees:
Height - 3 to 10 feet
Length - 58 miles

Haystack Dam and Lake
Dam: Type - Homogeneous Fill
Height - 78 feet
Length - 2,300 feet

Spillway: Type - Ungated, concrete, low ogee spillway
Crest width - 200 feet
Capacity - 4,600 c.f.s.

Lake Capacity: Flood Control storage - 5,300 ac-ft

Lands and Damages: Acres - 682
Type - grazing
Improvements - None

Fish & Wildlife Mitigation
Acres - 2,859

JUSTIFICATION: The project will provide flood protection to residential, commercial, and agricultural lands within and adjacent to the city of Merced and Castle Air Force Base. The population of Merced County was 90,440 in 1960, increased to 155,000 by 1985, and is expected to reach 177,000 by 2000. Rapid urbanization is increasing the severity of serious flooding problems that exist along the streams draining from the Sierra Nevada into Merced County. The 1985 value of physical improvements in the 73,700 acre area protected by the project is estimated at $2.1 billion. During the January-February 1969 floods, about 24,000 acres were flooded, with damages of $940,000 reported. With recurrence of that flood under present conditions, damages would amount to about $3,270,000. The average annual benefits are as follows:

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Benefits	Amount (1 October 1985)
Flood Control	$ 8,767,000
General Recreation	238,000
Area Redevelopment	605,000
	$ 9,610,000

FISCAL YEAR 1987: The requested amount of $3,000,000 will be applied as follows:

Castle Dam and Lake	
Continue Land Acquisition	$ 830,000
Continue Relocations	50,000
Initiate Reservoir	220,000
Continue Main Dam and Appurtenances	1,090,000
Continue Project Roads	75,000
Bear Dam and Lake	
Initiate Land Acquisition	170,000
Initiate Cultural Resources Preservation	125,000
Engineering and Design	270,000
Supervision and Administration	170,000
Total	$3,000,000

NON-FEDERAL COSTS: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, and rights-of-way for the channel portion of the project, presently estimated at $13,090,000; modify or relocate buildings, utilities, roads, and other facilities, except railroads and railroad bridges, where necessary in the construction of the project, presently estimated at $11,360,000; pay one-half of the separable and joint costs allocated to recreation, presently estimated at $275,000 of which $225,000 is a cash contribution and $50,000 is for lands, and bear all costs of operation, maintenance, and replacement of recreation facilities, presently estimated at $55,000 annually; pay 35 percent of the costs allocated to flood control for the reservoir portion of the project, presently estimated at $18,300,000; pay at least 5 percent of the costs allocated to flood control for the channel portion of the project, presently estimated at $2,575,000, and if necessary pay an additional amount to bring the non-Federal contribution to 25 percent of the flood control costs, and bear all costs of operation, maintenance, and major replacement of flood control facilities presently estimated at $506,000 annually. The total local share of project first costs on this basis is $46,100,000.

STATUS OF LOCAL COOPERATION: The Merced County Board of Supervisors has provided numerous letters and resolutions of local cooperation in the past. By letter dated 10 March 1982 the California State Reclamation Board expressed its willingness to participate in the project on the basis of the Administration's innovative cost sharing and upfront financing proposals. There has been recent indication from the Merced County Board of Supervisors that they are agreeable to the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership. Authorization for the Reclamation Board is presently limited to providing lands, easements, rights-of-way and utilities relocations for local protection projects. Action is expected by the State Legislature that would increase the authority of both the Reclamation Board and local governmental agencies to enable them to comply with the revised cost sharing proposals. The Merced County Flood Control District has been authorized by the State Legislature and the Merced County Board of Supervisors designated as its interim directors. In accordance with the Fiscal Year 1985 Supplemental Appropriations Act (Public Law 99-88), a written agreement satisfying all the requirements of Section 221, Flood Control Act of 1970 (Public Law 91-611), will be obtained from the non-Federal sponsor and executed prior to 30 June 1986.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $57,900,000 is an increase of $8,200,000 from the latest estimate ($49,700,000) submitted to Congress. This change includes increases of $1,960,000 based on higher price levels to 1 October 1985 and $6,240,000 for an estimated inflation allowance from 1 October 1985 through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement was submitted to EPA on 25 September 1981.

The provisions of Section 404 of the Clean Water Act were met with the submission of the Final Environmental Impact Statement, including a Section 404(b)(1) evaluation, to Congress on 31 March 1982.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1973 and for construction in the FY 1985 Supplemental Appropriations Act.

The local sponsor has proposed that the entire project be treated as a local protection project. On this basis, under the terms and conditions agreed to by the Administration and the Senate Majority Leadership, the Federal share of project costs would be $70,500,000, and the non-Federal share would be $33,500,000.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: Sacramento

Project: Merced County Streams, California

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	49,700 (Oct 83)		49,700 (Oct 83)		57,900 1/
Reason for Change				8,200 1/	
a. Price Escalation				8,200	
b. Design Changes					
c. Additional Function Added Under General Authorization					
d. Authorized Modification					
e. Post-Contract Award and Other Estimating Adjustments					
f. Schedule Changes					
g. Sundry					
h. Real Estate					

1/ Includes $6,240 allowance for estimated inflation from 1 October 1985 through the construction period.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: RESERVOIRS (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	LAND AND DAMAGES	2,605,000		500,000	1,735,000	370,000
2	RELOCATIONS	2,295,000		390,000	80,000	1,825,000
3	RESERVOIR	940,000			380,000	560,000
4	DAMS	38,640,000		475,000	1,900,000	36,265,000
5	FISH AND WILDLIFE FACILITIES	455,000				455,000
6	ROADS	1,815,000		70,000	130,000	1,615,000
7	CHANNELS	1,345,000				1,345,000
8	LEVEES	18,510,000				18,510,000
9	RECREATION FACILITIES	430,000				430,000
10	CUL RES PRESERVATION	360,000		60,000	215,000	85,000
11	PERM OPER EQUIPMENT	255,000		25,000		230,000
12	ENGINEERING AND DESIGN	6,660,000	4,390,000	550,000	470,000	1,250,000
13	SUPERVISION AND ADMINISTRATION	4,690,000	160,000	150,000	300,000	4,080,000
14						
15	TOTAL COST (Fed Funds and					
16	Non-Fed Contrib)	79,000,000	4,550,000	2,220,000	5,210,000	67,020,000
17	Undelivered Orders (None)					
18	TOTAL OBLIGATIONS (Fed Funds and		4,550,000	2,220,000	5,210,000	67,020,000
19	Non-Fed Contrib)					
20						
21	FEDERAL FUNDS					
22	TOTAL COST	57,900,000	4,550,000	1,720,000	3,000,000	48,630,000
23	Undelivered Orders (None)					
24	TOTAL OBLIGATIONS		4,550,000	1,720,000	3,000,000	48,630,000
25						
26	NON-FEDERAL CONTRIBUTIONS					
27	TOTAL COST	21,100,000		500,000	2,210,000	18,390,000
28	Undelivered Orders (None)					
29	TOTAL OBLIGATIONS			500,000	2,210,000	18,390,000
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EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF-SOUTH PACIFIC | BASIN: SAN JOAQUIN | PROJECT: MERCED COUNTY STREAMS, CALIFORNIA

4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: RESERVOIRS (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	METHOD OF FINANCING					
2	FEDERAL FUNDS					
3	ALLOCATIONS		4,570,000	1,700,000 1/		
4	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			20,000		
5	TOTAL FUNDS AVAILABLE FOR OBLIGATION			1,720,000	3,000,000	48,630,000
6	APPROPRIATIONS REQUIRED					
7						
8	NON-FEDERAL					
9	CASH CONTRIBUTIONS	21,100,000		500,000	2,210,000	18,390,000
10	OTHER COSTS	25,000,000		0	0	25,000,000
11	LANDS AND DAMAGES	(13,140,000)				(13,140,000)
12	RELOCATIONS	(11,860,000)				(11,860,000)
13	OTHER	(0)				(0)
14	TOTAL NON-FEDERAL COST	46,100,000		500,000	2,210,000	43,390,000
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20	1/ Based on the current project schedule.					
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EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF-SOUTH PACIFIC | BASIN: SAN JOAQUIN | PROJECT: MERCED COUNTY STREAMS, CALIFORNIA

6 FEB 1985

1558

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Sacramento River and Major and Minor Tributaries, California (Continuing)

LOCATION: On Sacramento River from Colusa to Chico Landing; on the lower reaches of its tributaries from the mouth of Butte Creek to Red Bluff, California; and on Sutter, Tisdale, Sacramento and Yolo Bypasses.

AUTHORIZATION: 1944 and 1950 Flood Control Acts

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because the project is nearing completion. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1948) was 1.6 to 1. The benefit-cost ratio was based on benefits provided independently along major and minor tributaries and the bypass system of Sacramento River and the project's fair share of system benefits in a system including other Sacramento River Basin projects; records are not available to determine what the benefit-cost ratio was as the next added unit in this system.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost
Estimated Federal Cost	$11,900,000	
Estimated Non-Federal Cost	6,400,000	
Cash Contribution None		
Other Costs $6,400,000		
Total Estimated Project Cost	$18,300,000	
Allocations to 30 September 1985	$11,351,000	
Conference Allowance for FY 1986	200,000	
Allocation for FY 1986	200,000	
Allocations to Date	$11,551,000	97
Allocation Requested for FY 1987	$ 200,000	99
Scheduled Balance to Complete After FY 1987	149,000	
Unscheduled Balance to Complete After FY 1987	0	

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Butte Creek	100	
Cherokee Canal	100	
Chico Creek, Mud Creek and Sandy Gulch	100	
Deer Creek	100	
Elder Creek	100	
Revetment of Bypass Levees	87	Sep 1988
Entire Project	96	Sep 1988

Division: South Pacific District: Sacramento Region: California-South Pacific

Sacramento River & Major & Minor Tributaries, California

4 FEB 1986

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PHYSICAL DATA

Levees: Average height - 12 feet
Length - 107 miles

Channels: Channel Improvement - 72 miles

Diversion Structures: 2

Bypass Revetment: As required for protection of bypass levee slopes against erosion

JUSTIFICATION: This project is an integral unit of the authorized comprehensive plan for flood control in the Sacramento River Basin. It is a modification and extension of the Sacramento River Flood Control project and supplements reservoir units of the comprehensive plan by providing flood protection to certain unprotected or partially protected areas along the Sacramento River. Such areas include the city of Chico (population 30,500), other smaller communities, about 80,000 acres of agricultural land important to the economy of the region, Interstate Highway 5 and State Highway 99, and main lines of transcontinental railroads. The bypass levee revetment features of the project will provide protection to flood plain lands adjacent to the bypasses and will decrease requirements for levee repairs under emergency conditions. During the floods of December 1964 and January 1965, the completed portion of the project prevented $3,750,000 in damages. Had the remaining levee bypass revetment work been completed at the time of the flood, an additional $350,000 in damages would have been prevented. During the January 1970 floods, the partially completed project prevented an estimated $2,000,000 in damages. Average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$5,790,000
Area Redevelopment	60,000
	$5,850,000

FISCAL YEAR 1987: The requested amount of $200,000 will be applied as follows:

Initiate and complete bypass levee revetment - Contract 11	$ 185,000
Engineering and Design	6,000
Supervision and Administration	9,000
Total	$ 200,000

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NON-FEDERAL COSTS: The initial investment required of local interests in construction of the authorized project is estimated at $6,400,000 broken down as follows:

Lands and Damages	$2,400,000
Relocations	4,000,000
Total	$6,400,000

Local interests are required to maintain and operate the project upon completion. The annual cost for maintenance, operation, and replacements is estimated at $416,000.

STATUS OF LOCAL COOPERATION: The Chief of Engineers accepted assurances of local cooperation from the State of California on 22 March 1948. Local interests, represented by the Reclamation Board of the State of California, have fully complied with local cooperation requirements. Local cooperation expenditures as of 30 September 1985 were $6,400,000.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $11,900,000 is the same as the last estimate submitted to Congress. Escalation of the cost estimate through the construction period is not required in that all authorized active work has been completed except bypass levee revetment on which maximum cost is fixed.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Draft Environmental Impact Statement was submitted to CEQ on 30 August 1974. The Final Environmental Impact Statement was submitted 1 August 1975.

The provisions of Section 404 of the Clean Water Act do not apply, because the uncompleted portions of project improvements do not involve the placement of fill material or discharge of dredged material into the waters of the United States.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1946, and for construction in FY 1948. All work other than revetment of bypass levees was completed in FY 1965.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: Sacramento

Project: Sacramento River and Major and Minor Tributaries, California

Item	Original Baseline (1)	Cumulative Changes (2)	Estimates Presented to Congress ($1,000) Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	23,000 (Jul 58)		11,900 1/		11,900 2/
Reason for Change		(-) (11,100)			
a. Price Escalation		1,857			
b. Design Changes		1,718			
c. Additional Function Added Under General Authorization					
d. Authorized Modification		(-) 12,295			
e. Post-Contract Award and Other Estimating Adjustments		(-) 1,259			
f. Schedule Changes					
g. Sundry		(-) 1,121			
h. Real Estate					

1/ Project as authorized included flattening of bypass levee slopes to protect those levees against erosion. Based on experience that slope flattening is not an effective erosion control measure, bypass levee revetment work is included in project as a substitute measure. Federal expenditures for revetment are limited to the cost which would have been incurred for slope flattening had it been accomplished. Since all work other than revetment of bypass levees has been completed, total project cost will remain unchanged.

2/ Escalation of cost estimate through the construction period is not required in that all authorized active work has been completed except bypass levee revetment on which maximum cost is fixed.

4 FEB 1986 1562

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: Local Protection (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	CHANNELS	485,000	485,000			
2	LEVEE & FLOODWALLS	8,550,000	8,042,000	185,000	185,000	138,000
3	DIVER STRUCT	382,000	382,000			
4	PERM OPER EQUIPMENT	34,000	34,000			
5	ENGINEERING AND DESIGN	1,493,000	1,480,000	4,000	6,000	3,000
6	SUPERVISION AND ADMISISTRATION	956,000	928,000	11,000	9,000	8,000
7						
8	TOTAL COST Fed Funds and					
9	Non-Fed Contrib)	11,900,000	11,351,000	200,000	200,000	149,000
10	Undelivered Orders (None)					
11	TOTAL OBLIGATIONS (Fed Funds and		11,351,000	200,000	200,000	149,000
12	Non-Fed Contrib)					
13						
14	FEDERAL FUNDS					
15	TOTAL COST	11,900,000	11,351,000	200,000	200,000	149,000
16	Undelivered Orders (None)					
17	TOTAL OBLIGATIONS		11,351,000	200,000	200,000	149,000
18						
19	NON-FEDERAL CONTRIBUTIONS					
20	TOTAL COST	0				
21	Undelivered Orders (None)					
22	TOTAL OBLIGATIONS					
23						
24	METHOD OF FINANCING					
25	FEDERAL FUNDS					
26	ALLOCATIONS		11,351,000	200,000		
27	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			0		
28	TOTAL FUNDS AVAILABLE FOR OBLIGATION			200,000		
29	APPROPRIATIONS REQUIRED				200,000	149,000
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EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF - SOUTH PACIFIC | BASIN: SACRAMENTO | PROJECT: SACRAMENTO RIVER AND MAJOR & MINOR TRIBUTARIES, CALIFORNIA

4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL

CLASSIFICATION: Local Protection (Flood Control)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	NON-FEDERAL					
2	CASH CONTRIBUTIONS	0	0			
3	OTHER COSTS	6,400,000	6,400,000			
4	LANDS AND DAMAGES	(2,400,000)	(2,400,000)			
5	RELOCATION	(4,000,000)	(4,000,000)			
6	OTHER	(0)	(0)			
7	TOTAL NON-FEDERAL COST	6,400,000	6,400,000			
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EFFECTIVE DATE	DIVISION: SOUTH PACIFIC	REGION: CALIF-SOUTH PACIFIC	PROJECT: SACRAMENTO RIVER AND MAJOR & MINOR TRIBUTARIES, CALIFORNIA
1 JAN 86	DISTRICT: SACRAMENTO	BASIN: SACRAMENTO	

4 FEB 1986 1564

APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Sacramento River Bank Protection Project, California (Continuing)

LOCATION: Along Sacramento River and its principal tributaries, in north-central California, within the limits of the existing levee system.

AUTHORIZATION: 1960 Flood Control Act; 1974 River Basin Monetary Authorization Act; Further Continuing Appropriations Act, 1983.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because monetary benefits have not been quantified. In the reevaluation of project benefits for the Second Phase report, it was determined impractical to assign a monetary value to the benefits which would result from the removal of threats of eventual levee breaks when there are hundreds of vulnerable locations in various states of deterioration. Therefore, a project benefit-cost ratio was not included in the report submitted to the Congress on the advisability for remaining work.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost
Estimated Federal Cost	$ 90,000,000	
Estimated Non-Federal Cost	45,000,000 1/	
Cash Contribution $25,000,000		
Other Costs 20,000,000		
Total Estimated Project Cost	$135,000,000	
Allocations to 30 September 1985	$ 51,346,000	
Conference Allowance for FY 1986	3,500,000	
Allocation for FY 1986	3,500,000	
Allocations to Date	$ 54,846,000	61
Allocation Requested for FY 1987	$ 7,000,000	69
Scheduled Balance to Complete After FY 1987	28,154,000	
Unscheduled Balance to Complete After FY 1987	0	

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Levees	78	Sep 1991
Recreation Facilities	60	Sep 1991
Entire Project	78	Sep 1991

PHYSICAL DATA

Bank Protection: 835,000 lineal feet
First Phase - 430,000 lineal feet
Second Phase - 405,000 lineal feet

1/ In addition, for reaches where local interests request bank stabilization instead of setbacks recommended by the Chief of Engineers, the local interests will contribute the costs over and above the cost of setbacks.

Division: South Pacific District: Sacramento Region: California-South Pacific

Sacramento River Bank Protection Project, California

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JUSTIFICATION: The Sacramento River levee system was initiated as a purely local project and in many cases the levees were constructed close to the river banks without a protective berm. The levee system which was adopted as the Sacramento River Flood Control Project in 1917 has been modified and expanded several times since that date but no major change in the basic levee alignment has been made since the original conception of the project. Bank protection is necessary to preserve the Sacramento River Flood Control Project and insure that it will continue to furnish the designed degree of protection. The levees are seriously threatened by erosion, and unless corrective measures are taken levee failures may occur with resultant catastrophic damage and possible loss of many lives. The area protected by the levees comprises over one million acres in which about 50 communities are located; value of lands and improvements (1985) to be protected is about $12.2 billion and about 1,060,000 people live within the flood plain. The levee system enables the use of the flood plain for the benefit of the state and nation. The extremely fertile flood plain lands produce over 10 percent of the total agricultural production of the state and 20 percent of the rice production of the nation. The Sacramento River Bank Protection Project provides a long-range program of bank protection to protect the levees where serious erosion is occuring and to prevent erosion from undermining additional levee sections in the future. In addition to assuring urgently needed flood protection, the project will provide recreation facilities consisting of boat-launching facilities, campgrounds, and picnic areas needed along the river to meet a rapidly increasing public demand. Since the initial bank protection contract was let in June 1963, about 650,000 lineal feet of bank protection have been provided.

FISCAL YEAR 1987: The requested amount of $7,000,000 will be applied as follows:

Continue bank protection, contract 38B		$1,170,000
Continue bank protection, contract 40		4,560,000
Engineering and Design		900,000
Supervision and Administration		370,000
	Total	$7,000,000

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NON-FEDERAL COSTS: Local interests are required to contribute an amount in cash which when added to the cost of lands, easements, rights-of-way, and utility changes, equals one-third of the cost of each unit of the remedial work, a contribution presently estimated at $25,000,000 for the initial and second phases of the project; provide without cost to the United States all lands, easements, and rights-of-way necessary for the proposed work; make all necessary relocations and alterations to roads, bridges, irrigation and drainage facilities, and other utilities; maintain and operate the completed individual project units in accordance with regulations prescribed by the Secretary of the Army; and hold and save the United States free from damages due to the construction works. The estimated first costs to local interests are as follows:

Cash contribution		$25,000,000
Lands, easements, and rights-of-way		12,000,000
Utility revisions		8,000,000
	Total	$45,000,000

Local interests are required to maintain and operate the project upon completion. The annual cost for maintenance and operation is estimated at $865,000.

STATUS OF LOCAL COOPERATION: Chapter 2188, Statutes of the State of California, approved by the Governor on 21 July 1961, established the State Reclamation Board as the agency to meet the requirements of local cooperation for the project. Assurances of local cooperation were accepted from the Board 5 February 1963. As of 1 October 1985, the State has expended $26,470,000 for construction of the project. By letter dated 30 April 1974 from the Resources Agency of California, the State endorsed a total of 182,000 lineal feet of the 405,000 lineal feet of bank protection proposed for Second Phase work. Such endorsement covered construction completed through November 1982. The Resources Agency renewed its support of continuing work on the project by letter dated 7 February 1983 for the remaining 223,000 lineal feet of authorized bank protection work.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $90,000,000 is a decrease of $2,000,000 from the latest estimate ($92,000,000) submitted to Congress. This change includes a decrease of $3,200,000 for adjustments in the estimated inflation allowance through the construction period; partially offset by increases of $1,050,000 for Engineering and Design due to additional design and environmental requirements for remaining work and $150,000 for higher price levels.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was submitted to CEQ 15 June 1973. Supplements to the Environmental Impact Statement were filed on 6 May 1975, 6 April 1979, an 1 February 1985. A Supplement to the Final Environmental Impact Statement for additional work in the Butte Basin area is scheduled for submittal to EPA in June 1987.

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The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation completed 7 February 1979 for all Second Phase bank protection. The District Engineer's signature on the Finding of Compliance Statement indicating conformance with requirements of the Clean Water Act was signed on 15 March 1985 for all remaining Second Phase bank protection work.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1962, and for construction in FY 1963. Construction of First Phase was completed in November 1974. Authority to proceed with additional bank protection works, Second Phase, was provided by Section 202, River Basin Monetary Authorization Act of 1974, Public Law 93-251.

Second Phase of the project, which covers 405,000 lineal feet of proposed bank protection, is composed of two parts. Part 1, which consists of 182,000 lineal feet (Contracts 27 through 36) was completed in November 1982. Endorsement of Second Phase, Part 2 (beyond Contract 36) was received from the State Resources Agency in February 1983.

The Further Continuing Appropriations Act, 1983 extended the limits of the project to include bank protection along the Sacramento River from Chico Landing to the upstream ends of the project levees (Butte Basin area).

An evaluation of fish and wildlife mitigation and enhancement features as related to project induced impacts on the completed First Phase construction has been completed. The project as originally authorized did not include fish and wildlife measures needed to prevent or offset losses or damages to these resources. A final report, "Fish and Wildlife Program for Sacramento River Bank Protection Project, California, First Phase", recommends that the existing First Phase of the project be modified to include aquisition of 260 acres for establishment and maintenance of wildlife habitat as a wildlife mitigation measure. On 10 September 1984 the Secretary of the Army transmitted the report to Congress together with the views of other Federal agencies and the State of California. Existing fish and wildlife mitigation cost sharing policies which are applicable to the project, have been adopted by the Administration. Total costs of the modified program are currently estimated to be $1,400,000 with recommendation that these costs be shared in accordance with project authorization.

The U.S. Fish and Wildlife Service, by letter dated 7 November 1985, issued a Biological Opinion which expressed concern that bank protection work along the Sacramento River from Chico Landing to Red Bluff and in the Butte Basin area would endanger the continued existence of the threatened valley elderberry longhorn beetle. Currently, the Corps is coordinating with the Fish and Wildlife Service in identifying various alternatives to minimize disturbance to the beetle's habitat. It is anticipated this coordination will result in a modified Biological Opinion which will allow bank protection work in this area to continue. The modified Biological Opinion is expected by September 1986. Pending resolution of this issue, no work is included in any construction contract scheduled for award through Fiscal Year 1987 in the area affected by this opinion.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: Sacramento

Project: Sacramento River Bank Protection Project, California

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	15,100 (Jul 61)		92,000 1/		90,000 1/ 2/
Reason for Change		(76,900) 1/		(-)2,000 2/	
a. Price Escalation		50,565		(-)3,050	
b. Design Changes		430			
c. Additional Function Added Under General Authorization					
d. Authorized Modification		32,000			
e. Post-Contract Award and Other Estimating Adjustments		(-)7,625		1,050 3/	
f. Schedule Changes					
g. Sundry		1,530			
h. Real Estate					

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes a reduction of $3,200 for adjustments in the estimated inflation allowance through the construction period.
3/ Increase due to additional design and environmental requirements for remaining work.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	LEVEES & FLOODWALLS	97,140,000	53,480,000	3,400,000	7,360,000	32,900,000
2	RECREATION FACILITIES	2,420,000	1,220,000			1,200,000
3	CUL RES PRESERVATION	30,000	30,000			
4	ENGINEERING AND DESIGN	9,640,000	6,181,000	997,000	1,160,000	1,302,000
5	SUPERVISION AND ADMINISTRATION	5,770,000	3,453,000	240,000	480,000	1,597,000
6						
7	TOTAL COST (Fed Funds and					
8	Non-Fed Contrib)	115,000,000	64,364,000	4,637,000	9,000,000	36,999,000
9	Undelivered Orders		91,000	-91,000		
10	TOTAL OBLIGATIONS (Fed Funds and		64,455,000	4,546,000	9,000,000	36,999,000
11	Non-Fed Contrib)					
12						
13	FEDERAL FUNDS					
14	TOTAL COST	90,000,000	51,304,000	3,542,000	7,000,000	28,154,000
15	Undelivered Orders		25,000	-25,000		
16	TOTAL OBLIGATIONS		51,329,000	3,517,000	7,000,000	28,154,000
17						
18	NON-FEDERAL CONTRIBUTIONS					
19	TOTAL COST	25,000,000	13,060,000	1,095,000	2,000,000	8,845,000
20	Undelivered Orders		66,000	-66,000		
21	TOTAL OBLIGATIONS		13,126,000	1,029,000	2,000,000	8,845,000
22						
23	METHOD OF FINANCING					
24	FEDERAL FUNDS					
25	ALLOCATIONS		51,346,000	3,500,000		
26	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			17,000		
27	TOTAL FUNDS AVAILABLE FOR OBLIGATION			3,517,000		
28	APPROPRIATIONS REQUIRED				7,000,000	28,154,000
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EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF - SOUTH PACIFIC | BASIN: SACRAMENTO | PROJECT: SACRAMENTO RIVER BANK PROTECTION PROJECT, CALIFORNIA

4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	NON-FEDERAL					
2	CASH CONTRIBUTIONS	25,000,000	13,060,000	1,095,000	2,000,000	8,845,000
3	OTHER COSTS	20,000,000	13,410,000	663,000	1,400,000	4,527,000
4	LANDS AND DAMAGES	(12,000,000)	(8,045,000)	(400,000)	(840,000)	(2,715,000)
5	RELOCATION	(8,000,000)	(5,365,000)	(263,000)	(560,000)	(1,812,000)
6	OTHER	(0)	(0)	(0)	(0)	(0)
7	TOTAL NON-FEDERAL COST	45,000,000	26,470,000	1,758,000	3,400,000	13,372,000
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EFFECTIVE DATE: 1 JAN 86

DIVISION: SOUTH PACIFIC

DISTRICT: SACRAMENTO

REGION: CALIF - SOUTH PACIFIC

BASIN: SACRAMENTO

PROJECT: SACRAMENTO RIVER BANK PROTECTION PROJECT, CALIFORNIA

4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Sacramento River, Chico Landing to Red Bluff, California (Continuing)

LOCATION: On Sacramento River between Chico Landing and Red Bluff, California, about 110 miles north of Sacramento, California.

AUTHORIZATION: 1958 Flood Control Act and 1976 Water Resources Development Act

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 3.0 to 1 at 2-5/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1963) was 1.3 to 1. The benefit-cost ratio was based on the project's fair share of incremental benefits and costs associated with site specific bank protection work on the Sacramento River.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost
Estimated Federal Cost	$30,000,000	
Estimated Non-Federal Cost	1,800,000	
Cash Contribution $ 0		
Other Cost 1,800,000		
Total Estimated Project Cost	$31,800,000	
Allocations to 30 September 1985	$10,395,000	
Conference Allowance for FY 1986	2,500,000	
Allocation for FY 1986	500,000 1/	
Allocations to Date	$10,895,000	36
Allocation Requested for FY 1987	$ 600,000	38
Scheduled Balance to Complete After FY 1987	0	
Unscheduled Balance to Complete After FY 1987	$18,505,000	

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Channels	54 2/	Unsched
Entire Project	54 2/	Unsched

PHYSICAL DATA

Bank Protection: 175,600 Lineal Feet at selected sites, Tehama, Butte and Glenn Counties.

Channel Improvement: Snagging and Clearing as required.

1/ Reflects $1,000,000 reduction assigned as savings and slippage and $1,000,000 transfer from the project.
2/ Remaining bank protection work is unscheduled pending resolution of environmental issues.

Division: South Pacific District: Sacramento Region: California-South Pacific

Sacramento River, Chico Landing to Red Bluff, California

4 FEB 1986

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JUSTIFICATION: The project comprises extension and modification of the existing Sacramento River Flood Control Project by the construction of bank protection and minor channel improvements along the Sacramento River between Chico Landing and Red Bluff, and flood plain zoning between the city of Chico and Keswick Dam. The Sacramento River and its tributaries present a very serious and continuing bank erosion problem. Some of the most severe erosion conditions exist between Chico Landing and Red Bluff. The zoning feature of the project prevents further impairment of existing floodway areas. Approximately 44 acres of agricultural land valued at about $375,000 erode annually threatening roads, farm buildings and homes. Eroded material is deposited in the downstream flood control bypasses and navigation channels requiring removal to maintain floodflow conveyance capacities and navigation depths. In 1980, approximately 163 acres of agricultural land currently valued at $1,390,000 eroded into the Sacramento River and an additional 200 acres, estimated value at $1,700,000 also eroded during January and March 1983. Average annual benefits, for flood control (prevention of bank erosion), are estimated at $3,510,000.

FISCAL YEAR 1987: The requested amount of $600,000 will be applied as follows:

Engineering and Design		$500,000
Supervision and Administration		100,000
	Total	$600,000

NON-FEDERAL COSTS: The initial investment of local interests toward construction of the authorized project is estimated at $1,800,000 for lands and damages. Local interests are required to maintain and operate the project after completion. The annual cost for maintenance and operation is estimated at $109,000. (See OTHER INFORMATION)

STATUS OF LOCAL COOPERATION: The State of California officially adopted the project by Chapter 1912 of the Statutes of 1959 and established the State Reclamation Board as the agency to furnish required assurances and requirements of local cooperation for the project. Flood plain zoning ordinance adopted by Tehama County Board of Supervisors 5 September 1961 provides suitable flood plain zoning in Tehama County. Formal assurances for Tehama County work were furnished by the State Reclamation Board 7 May 1962. Action by the State relative to designation of primary floodways and revision of Butte and Glenn Counties building ordinances in March 1971 and May 1972, respectively, have satisfied project zoning requirements in both counties. The Reclamation Board furnished required assurances for Butte County on 29 June 1972 and Glenn County on 9 March 1973. A resolution of unconditional compliance with all the requirements of Section 221, Flood Control Act of 1970, Public Law 91-611, for all remaining construction was obtained from local interests on 15 September 1982. In the report of the House of Representatives Committee on Appropriations accompanying FY 1986 appropriations, the Corps was directed to not initiate further construction activity until the State Reclamation Board voluntarily agrees to provide additional mitigation measures for fish and wildlife resources affected by project construction, and to voluntarily increase certain other requirements of local cooperation. (See OTHER INFORMATION)

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COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $30,000,000 is a decrease of $1,000,000 from the latest estimate ($31,000,000) submitted to Congress. This change includes a decrease of $1,100,000 for adjustments of the estimated inflation allowance through the construction period, partially offset by an increase of $100,000 for higher price levels.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement was submitted to CEQ 6 May 1975. A Supplemental Environmental Impact Statement was submitted to EPA on 26 May 1983 to update environmental impact discussions including identification of cumulative impacts of past and potential future contract work of the project. Supplemental Information Reports were filed with EPA on 26 August 1983 and 23 May 1984 for contracts awarded in 1983 and 1984. Additional Supplemental Information Reports will be prepared and filed with EPA for each new reach of river as contract work proceeds downstream.

The provisions of Section 404 of the Clean Water Act have been met for all reaches of the comprehensive bank protection plan from Chico Landing to Red Bluff. A 404(b)(1) evaluation was completed and Certification from the State of California was obtained 22 March 1984. A Section 404, Finding of Compliance was signed by the District Engineer on 18 May 1984.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1961, and for construction in FY 1963.

The State of California Reclamation Board, by letter dated 20 September 1985, requested the Corps modify the plan of bank protection work for the project. The Board requested a comprehensive bank protection plan starting with Reach 3 (Woodson Bridge to Foster Island) and proceeding downstream to the limits of the project at Chico Landing. The Reclamation Board proposes to formulate its own plan in Reaches 1 and 2 (Red Bluff to Woodson Bridge).

The House Appropriations Committee Report on the Energy and Water Development Appropriation Act for Fiscal Year 1986 directed implementation of various modifications to the comprehensive bank protection program currently underway in order to minimize disturbances to fish and wildlife resources, as well as voluntary increases in local cooperation requirements. The specific directive states that:

"The Committee has concerns that some fishery and riparian habitat mitigation measures proposed for the Sacramento River Chico Landing to Red Bluff project, while based on the best available knowledge, have been largely untested. The Committee is also concerned that other mitigation practices have not been as effective as planned. The Committee feels these problems are aggravated by the sequential approach of the project, which calls for its initial activities to take place in Sacramento River's most sensitive remaining salmon habitat before adequacy of mitigation can be established.

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Conversely, the Committee recognizes the importance of the project, the difficulty of quantifying its effects to the satisfaction of all interests, and the high degree of mitigation that has actually been proposed to meet the worst assumptions about the effects, to the extent the effects are determinable.

Therefore, and noting that less construction will be achieved in fiscal year 1985 than planned, the Committee directs that the Corps of Engineers not proceed with work as previously scheduled and that the Corps instead reschedule the work for implementation in fiscal year 1986. However, the Corps may perform bank protection work in order to protect significant public facilities if in its judgement such work is not inconsistent with the requirements for sequential staging.

The Committee has included $2,500,000 for the project in FY 1986, subject to implementation of the following directives:

The Committee directs that the Corps scope each construction contract for the project so that the work entailed by each contract will be completed in a single construction season. The work entailed by each contract shall be designed to incorporate as fully as possible findings derived from monitoring of mitigation efforts undertaken previously. The designs shall consider means to preserve low terrace as well as high terrace riparian habitat, including the possibility of limited stretches of unstabilized river where reasonably consistent with other project objectives.

The Committee notes that alternative bank protection methods have been employed in Texas. The Corps is directed to include a test section, similar to the alternative methods of bank protection being used in Texas, in any 1986 construction contract for the Chico Landing to Red Bluff Project to determine their feasibility as part of this project. The Corps is also directed to use a portion of the funds for fiscal year 1985 to test, in existing riprapped areas, means recommended by the U.S. Fish and Wildlife Service to replicate the beneficial effects on the salmon fishery of natural bank features, as well as means to reduce predation of young salmon.

The Corps is directed to reevaluate the additional costs of environmental mitigation measures, as well as the benefits of avoiding costs for flood protection work and public facility replacement which would be necessary in the absence of the project.

The Committee has provided funds for the project on the condition that the Corps not initiate further construction activity until the local sponsor voluntarily agrees to provide the following:

That the supply of spawning gravels in the Chico Landing to Red Bluff stretch will be monitored by the State, and that the State will replenish losses of spawning gravel which in the judgement of the appropriate state and federal agencies are attributable to the project.

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That the State will annually plant numbers of young salmon sufficient to result in an adult spawning population of 3,400 in the Chico Landing to Red Bluff stretch until such time as the appropriate state and federal agencies determine that losses attributable to the project differ, in which case the State shall agree to plant sufficient fish to replace that different number.

That the State will continue to require easements from the land owners of at least 30 feet in width, and that the easement contracts be drafted in such a way as to ensure no economic use or intrusion on the easements, including roads or overhanging orchards, and that there will be the minimum feasible disruption of the easements during construction and maintenance.

That the State shall complete purchase of lands as provided for in its environmental documentation to mitigate each of the five reaches of the project, prior to the commencement of construction on each of the reaches.

The Corps is directed to report on its progress in implementing these conditions in its 1987 budget submission to the Committee."

Presently, the Corps is holding all remaining bank protection work in abeyance pending determination of the sponsor's position on the Committee's recommended modifications and alternatives to the current method of bank protection.

The U.S. Fish and Wildlife Service, by letter dated 7 November 1985, issued a Biological Opinion which expressed concern that bank protection work along the Sacramento River from Chico Landing to Red Bluff would endanger the continued existence of the threatened valley elderberry longhorn beetle. The Corps and the Fish and Wildlife Service are continuing discussions which will identify various modifications that will avoid or minimize disturbance to the beetle's habitat.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: Sacramento

Project: Sacramento River, Chico Landing to Red Bluff, California

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	1,990 (Jul 61)		31,000 1/		30,000 1/2/
Reason for Change		(29,010) 1/		(-)(1,000) 2/	
a. Price Escalation		7,028		(-) 1,000	
b. Design Changes		350			
c. Additional Function Added Under General Authorization					
d. Authorized Modification		22,204 3/			
e. Post-Contract Award and Other Estimating Adjustments		(-) 570			
f. Schedule Changes					
g. Sundry		(-) 2			
h. Real Estate					

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes a reduction of $1,100 for adjustments in the estimated inflation allowance through the construction period.
3/ Includes an increase for 67,000 lineal feet of bank protection.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	CHANNELS	25,000,000	7,970,000	78,000		16,952,000
2	ENGINEERING AND DESIGN	3,300,000	1,767,000	550,000	500,000	483,000
3	SUPERVISION AND ADMINISTRATION	1,700,000	460,000	70,000	100,000	1,070,000
4						
5	TOTAL COST (Fed Funds and					
6	Non-Fed Contrib)	30,000,000	10,197,000	698,000	600,000	18,505,000
7	Undelivered Orders		86,000	-86,000		
8	TOTAL OBLIGATIONS (Fed Funds and		10,283,000	612,000	600,000	18,505,000
9	Non-Fed Contrib)					
10						
11	FEDERAL FUNDS					
12	TOTAL COST	30,000,000	10,197,000	698,000	600,000	18,505,000
13	Undelivered Orders		86,000	-86,000		
14	TOTAL OBLIGATIONS		10,283,000	612,000	600,000	18,505,000
15						
16	NON-FEDERAL CONTRIBUTIONS					
17	TOTAL COST	0				
18	Undelivered Orders (None)					
19	TOTAL OBLIGATIONS					
20						
21	METHOD OF FINANCING					
22	FEDERAL FUNDS					
23	ALLOCATIONS		10,395,000	500,000 1/		
24	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			112,000		
25	TOTAL FUNDS AVAILABLE FOR OBLIGATION			612,000		
26	APPROPRIATIONS REQUIRED				600,000	18,505,000
27						
28						
29						
30	1/ Reflects $1,000,000 reduction assigned as savings and slippage and $1,000,000 transfer from the project.					
31						
32						
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EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF - SOUTH PACIFIC | BASIN: SACRAMENTO | PROJECT: SACRAMENTO RIVER CHICO LANDING TO RED BLUFF, CALIFORNIA

4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	NON-FEDERAL					
2	CASH CONTRIBUTIONS	0				
3	OTHER COSTS	1,800,000	930,000			870,000
4	LANDS AND DAMAGES	(1,670,000)	(900,000)			(770,000)
5	RELOCATION	(130,000)	(30,000)			(100,000)
6	OTHER	(0)	(0)			(0)
7	TOTAL NON-FEDERAL COST	1,800,000	930,000			870,000
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EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF - SOUTH PACIFIC | BASIN: SACRAMENTO | PROJECT: SACRAMENTO RIVER CHICO LANDING TO RED BLUFF, CALIFORNIA

4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Sacramento River Flood Control Project, California (Continuing)

LOCATION: On the Sacramento River and the lower reaches of its principal tributaries in north-central California. The project extends from Collinsville near the mouth of the Sacramento River upstream to Ord Bend, a distance of 184 miles.

AUTHORIZATION: 1917, 1928, and 1941 Flood Control Acts;
1937 River and Harbor Act.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because the project is essentially completed, except for remedial work.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost
-ORIGINAL PROJECT-		
Actual Federal Cost	$ 68,925,000	
Actual Non-Federal Cost	95,000,000	
Cash Contribution $ 4,950,000		
Other Costs 90,050,000		
Total Actual Original Cost	$163,925,000	
-REMEDIAL WORK-		
Estimated Federal Cost	$ 6,025,000	
Estimated Non-Federal Cost	0	
Total Estimated Remedial Cost	$ 6,025,000	
Total Estimated Project Cost	$169,950,000	
Federal Allocations to 30 September 1985	$ 69,225,000	
Conference Allowance for FY 1986	250,000	
Allocation for FY 1986	250,000	
Allocations to Date	69,475,000	93
Allocation Requested for FY 1987	300,000	93
Scheduled Balance to Complete After FY 1987	5,175,000	
Unscheduled Balance to Complete After FY 1987	0	

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Original Project completed prior to 30 September 1981	100	
Remedial work		
Cache Slough/Yolo Bypass (Unit 109)	Not Started	Sep 1989
Entire Project	99	Sep 1989

Division: South Pacific District: Sacramento Region: California-South Pacific

4 FEB 1986

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PHYSICAL DATA

ORIGINAL PROJECT

Levees:	Average height - 15 feet Length - 980 miles	Bypass or Floodways:	4 Bypasses	Channels:	Channel Enlargement - 15 miles along the Sacramento River
Weirs:	5 Overflow Weirs	Cut-offs:	2 River Cut-offs	Pumping Plants:	3 Pumping Plants along east levee of Sutter Bypass

REMEDIAL WORK

Levees: Unit 109, Cache Slough and Yolo Bypass
Average Height - 25 feet 1/
Length - 2.4 miles

1/ Currently about 2.4 miles of existing levees are below grade with an average height of 22 feet.

JUSTIFICATION: The project comprises a comprehensive system of levees, overflow weirs, drainage pumping plants, and flood bypass channels extending along the Sacramento River from Collinsville near its mouth in Suisun Bay, upstream to Ord Bend, and along the lower reaches of principal tributaries together with channel improvements and bank protection on the Sacramento River and tributaries in Tehama County from Red Bluff southerly. Maintenance and operation of the completed project is the responsibility of local interests. Maintaining the stability of the project levees has been a continuing problem near the junction of Cache Slough and the Yolo Bypass and this portion of the project has not been turned over to local interests for maintenance. The levees in this reach are built on a peat foundation and are subject to subsidence problems, which seriously jeopardizes their stability and flood carrying capacity. Levee failures during floods subject 13,000 acres of highly productive agricultural lands to devastating damages.

FISCAL YEAR 1967: The requested amount of $300,000 will be applied as follows:

Engineering and Design	$250,000
Supervision and Administration	50,000
Total	$300,000

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NON-FEDERAL COSTS: Local interests have provided all lands, easements, rights-of-way and relocations for construction of the original project and have maintained and operated all completed work with the exception of those levees requiring remedial work near the junction of Cache Slough and the Yolo Bypass (Unit 109). The actual costs for the original project are listed below. At this time it does not appear that there will be any additional local cooperation requirements for the remedial work.

Cash Contribution	$ 4,950,000
Other Costs	90,050,000
Total	$95,000,000

STATUS OF LOCAL COOPERATION: All completed work has been transferred to the State Reclamation Board for operation and maintenance except for 2.4 miles of levee along the right bank of the Yolo Bypass and the left bank of Cache Slough. This levee was scheduled to be transferred to the Reclamation Board for operation and maintenance at the end of 1981; however, because serious subsidence continues to occur, the Reclamation Board's acceptance of operation and maintenance responsibility will be contingent upon the Corps of Engineers pursuing a permanent solution to remedy this problem.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $74,950,000 is a decrease of $575,000 from the latest estimate ($75,525,000) submitted to Congress. The decrease reflects a reduction of $575,000 for adjustments in the estimated inflation allowance through the construction period.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Sacramento River Flood Control Project work was substantially complete prior to 1970, and an Environmental Impact Statement has not been prepared. An environmental assessment is scheduled for completion in March 1986. If findings reveal significant impacts, an Environmental Impact Statement will be prepared and submitted to EPA in June 1987.

Section 404 of the Clean Water Act, as amended, is not applicable to the remedial work because this work does not involve discharge of dredged material or fill material into the waters of the United States.

OTHER INFORMATION: Construction was initiated in Fiscal Year 1918. All major project items are completed and approximately 980 miles of levees have been transferred to the State of California for maintenance. Only work remaining is remedial construction which is required to stabilize levees in subsidence areas. Engineering studies addressing the Cache Slough/Yolo Bypass subsidence problem have recommended alternative solutions. Possible solutions include changing the levee alignment and/or redesigning the levee section.

1582

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: Sacramento

Project: Sacramento River Flood Control Project, California

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	5,600 (Mar 17)		75,525 3/		74,950 3/ 4/
Reason for Change		(69,925)		(-)(575) 4/	
a. Price Escalation		8,729		(-) 575	
b. Design Changes		39,526 1/			
c. Additional Function Added Under General Authorization					
d. Authorized Modification		21,670 2/			
e. Post-Contract Award and Other Estimating Adjustments					
f. Schedule Changes					
g. Sundry					
h. Real Estate					

1/ Numerous design changes have been made during the nearly 70 year period which has elapsed between the original authorization and the latest plan submitted to Congress including deletion of proposed remedial work for Units 127 and 132 from estimate.

2/ Original authorization was Flood Control Act of March 1917 with subsequent modifications in the Flood Control Act of May 1928, River and Harbor Act of August 1937, and the Flood Control Act of August 1941.

3/ Includes an allowance for estimated inflation through the construction period.

4/ Includes a reduction of $575 for adjustments in the estimated inflation allowance through the construction period.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	LEVEES & FLOODWALLS	67,000,000	62,200,000			4,800,000
2	ENGINEERING AND DESIGN	7,400,000	6,880,000	235,000	250,000	35,000
3	SUPERVISION AND DESIGN	5,500,000	5,070,000	40,000	50,000	340,000
4						
5	TOTAL COST (Fed Funds and	79,900,000	74,150,000	275,000	300,000	5,175,000
6	Non-Fed Contrib)					
7	Undelivered Orders (None)					
8	TOTAL OBLIGATIONS (Fed Funds and		74,150,000	275,000	300,000	5,175,000
9	Non-Fed Contrib)					
10						
11	FEDERAL FUNDS	74,950,000	69,200,000	275,000	300,000	5,175,000
12	TOTAL COSTS					
13	Undelivered Orders (None)		69,200,000	275,000	300,000	5,175,000
14	TOTAL OBLIGATIONS					
15						
16	NON-FEDERAL CONTRIBUTIONS	4,950,000	4,950,000			
17	TOTAL COST					
18	Undelivered Orders (None)		4,950,000			
19	TOTAL OBLIGATIONS					
20						
21	METHOD OF FINANCING					
22	FEDERAL FUNDS		69,225,000	250,000		
23	ALLOCATIONS			25,000		
24	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			275,000		
25	TOTAL FUNDS AVAILABLE FOR OBLIGATION				300,000	5,175,000
26	APPROPRIATIONS REQUIRED					
27						
28						
29						
30						
31						
32						
33						

EFFECTIVE DATE: 1 JAN 86

DIVISION: SOUTH PACIFIC

DISTRICT: SACRAMENTO

REGION: CALIF-SOUTH PACIFIC

BASIN: SACRAMENTO

4 FEB 1986

PROJECT: SACRAMENTO RIVER FLOOD CONTROL PROJECT, CALIFORNIA

1584

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	NON-FEDERAL					
2	CASH CONTRIBUTIONS	4,950,000	4,950,000			
3	OTHER COSTS	90,050,000 1/	90,050,000 1/			
4	LANDS AND DAMAGES					
5	RELOCATIONS					
6	OTHER					
7	TOTAL NON-FEDERAL COST	95,000,000	95,000,000			
8						
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11						
12						
13	1/ Reflects non-Federal cost for lands and damages, relocations, and work in-kind dating back to 1910.					
14	Cost breakdown not available.					
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EFFECTIVE DATE: 1 JAN 86

DIVISION: SOUTH PACIFIC

DISTRICT: SACRAMENTO

REGION: CALIF-SOUTH PACIFIC

BASIN: SACRAMENTO

PROJECT: SACRAMENTO RIVER FLOOD CONTROL PROJECT, CALIFORNIA

4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Local Protection Project (Flood Control)

PROJECT: Sweetwater River, California (Continuing)

LOCATION: The project is located approximately four miles south of the city of San Diego, in the cities of Chula Vista and National City and unincorporated areas in San Diego County, California.

AUTHORIZATION: 1968 Flood Control Act

BENEFIT-COST RATIO: The remaining benefit - remaining cost ratio is 4.0 to 1 at 3-1/4 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1972) was 2.4 to 1. The benefit-cost ratio is based on the project being an inseparable portion of a comprehensive flood control and transportation plan which also includes Sweetwater and Loveland Reservoirs constructed by local interests.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. (CofE) Cost
Estimated Federal Cost		$ 87,900,000	
Corps of Engineers	$24,600,000		
Dept. of Transportion	63,300,000 1/		
Estimated Non-Federal Cost		24,000,000	
Cash Contribution	$ 1,190,000		
Other Costs			
Channel	15,110,000		
Highway	7,700,000 1/		
Total Estimated Project Cost		$111,900,000	
Allocations to 30 September 1985		$ 7,125,000	
Conference Allowance for FY 1986		6,000,000	
Allocation for FY 1986		6,000,000	
Allocations to Date		13,125,000	53
Allocation Requested for FY 1987		$ 7,200,000	83
Scheduled Balance to Complete After FY 1987		4,275,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Relocations	30	Sep 1987
Fish and Wildlife Facilities	0	Sep 1988
Channels	5	Jul 1988
Recreation Facilities	0	Sep 1988
Entire Project	5	Sep 1988

PHYSICAL DATA

Channels:
- Trapezoidal unlined-0.6 miles
- Stone revetted-2.6 miles

Bridges:
- Railroad-2 and Trackwork ($3,473,000)

Recreation Facilities:
- Beach Park
- Trails - Bicycle and Equestrian (6 miles)
- Rest Areas (2)

1/ Excludes an allowance for estimated inflation through the construction period.

Division: South Pacific District: Los Angeles Region: California-South Pacific

Sweetwater River, California

4 FEB 1986

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JUSTIFICATION: Construction of this project, which is a comprehensive flood control and highway transportation plan, will provide urgently needed flood protection to lands and improvements in the lower Sweetwater River valley. About 6,200 persons live or work in the 1,250 acre overflow area which will be protected by the project. The authorized channel will protect residential, commercial, industrial, and recreational properties, transportation facilities, and utilities, including water wells, sewers, and high-pressure gas and oil lines. Under present conditions of development, a repetition of the 1916 flood, the flood of record, modified by existing reservoirs, would cause damages estimated at $33,200,000. A repetition of the 1927 flood would cause damages of $16,100,000, practically all of which would be prevented with the project in full operation. The present value of all properties in the overflow area is $139,000,000. Floods also occurred in 1976, 1979, 1980 and 1983, washing out roads, closing streets, and causing flooding in trailer parks, industrial yards and buildings. The combined flood control and highway plan will permit the most efficient use of the limited lands available in the Sweetwater River Valley and will achieve savings resulting from simultaneous construction of both features. Average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$ 1,213,000
Transportation Savings (Highway)	8,707,000
Recreation	580,000
	$10,500,000

FISCAL YEAR 1987: The requested amount of $7,200,000 will be applied as follows:

Complete bridge relocations	$1,042,000
Continue channel construction	5,899,000
Engineering and Design	184,000
Supervision and Administration	75,000
Total	$7,200,000

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NON-FEDERAL COST: The investment required of local interests for construction of the project is estimated at $16,300,000, broken down as follows:

Lands and Damages	$ 8,440,000
Relocations (Roads, Bridges and Utilities)	6,670,000
Cash Contribution	1,190,000
Total	$16,300,000

Local interests are required to contribute one-half of separable costs allocated to recreation facilities, including lands and damages, presently estimated at $1,315,000, and approximately 52 percent for fish and wildlife mitigation estimated at $123,000. Local interests have constructed flood control, drainage, and related facilities at a total estimated cost in excess of $14,600,000 within the Sweetwater River Basin. Local interests have partially acquired lands, easements, and rights-of-way for the project at a cost of $4,210,000. In addition, they have expended $910,000 for utility relocations. Local interests are also required to maintain the project upon completion. The estimated annual costs for operation and maintenance are $205,000.

In addition, the California Department of Transportation will expend an estimated $7,700,000 for the construction of State Highway 54, as part of the comprehensive flood control and transportation plan. To date, they have expended approximately $3,500,000 for engineering and design, relocations, rights-of-way acquisition, and construction.

STATUS OF LOCAL COOPERATION: San Diego County, the legally responsible agency, through its Board of Supervisors, by resolution dated 20 April 1965, indicated a willingness to provide the required items of local cooperation. This resolution was accomplished by supporting resolutions of the City of Chula Vista, National City, and San Diego Unified Port District. Available information indicates that San Diego County, supported by the accompanying resolutions, has the legal and financial ability to meet the specified local cooperation requirements. The State of California officially adopted the project in Chapter 1038, Statute of 1968, and Water Code 12745. The San Diego County Board of Supervisors adopted Resolution No. 6 on 8 February 1984, reaffirming their support of the project and agreed to modifications in the draft 221 Agreement to include their acquisition of the recommended 188 acres of preservation and mitigation lands. In conformance with Section 221, Flood Control Act of 1970, Public Law 91-611, a written agreement of unconditional compliance with all requirements for the entire project was obtained from local interests and was signed by the District Engineer on 30 December 1984. Updated resolutions approving the City's intent to participate in recreation development were adopted by the City Councils of Chula Vista on 18 December 1984, and National City on 8 January 1985. A cost-sharing agreement for recreation will be obtained from the local sponsors prior to initiation of construction of these facilities.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $24,600,000 is an increase of $400,000 over the latest estimate ($24,200,000) submitted to Congress. This change includes a decrease of $900,000 for adjustments in the estimated inflation allowance through the construction period which was partially offset by increases of $49,000 for higher price levels; $1,154,000 due to higher than anticipated construction bids for channels and relocations from National City Boulevard to San Diego Bay; $16,000 for adjustment in recreation cost sharing; and $69,000 for Engineering and Design and $12,000 for Supervision and Administration based on reanalysis of requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Environmental Impact Statement was filed with EPA on 6 August 1982. A Record of Decision for the construction of the Sweetwater River Channel improvements was signed by the Chief of Engineers on 17 August 1984.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation Report included as an attachment to the Environmental Impact Statement. The California Regional Water Quality Control Board, San Diego Region, has reviewed the Environmental Impact Statement and responded with a letter stating that a permit may be required. An application outlining waste discharge requirements was approved on 26 November 1984 by the California Regional Water Quality Control Board.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1970, and construction funds were appropriated in FY 1972.

The State of California Department of Transportation is the Contracting Officer for the channel construction in conjunction with the state freeway construction, which parallels and incorporates the flood control channel.

Because of a requirement of the State and Federal Fish and Wildlife Agencies and the California Coastal Commission to include preservation and mitigation measures as part of the project, the current plan calls for property owners, in cooperation with the local sponsor, to provide 188 acres of marshland, of which 44 acres will be for mitigation due to channel encroachment and 144 acres for preservation to prevent commercial development in the marsh area. The final 221 Agreement calls for transfer of title of all preservation and mitigation lands, within one year of the date of signing this agreement, to the U.S. Fish and Wildlife Service, to the California Department of Fish and Game, or to another public agency approved by the Contracting Officer for preservation in public trust.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: Los Angeles

Project: Sweetwater River, California

Item	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	6,630 (Jul 70)		24,200 1/		24,600 1/ 2/
Reason for Change		(17,570)		(400) 2/	
a. Price Escalation		15,749		(-) 851	
b. Design Changes		(-) 5,352			
c. Additional Function Added Under General Authorization		1,657			
d. Authorized Modifications					
e. Post-Contract Award and Other Estimating Adjustments		4,664		1,251 3/	
f. Schedule Changes					
g. Sundry		832			
h. Real Estate					

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes a reduction of $900 for adjustments in the estimated inflation allowance through the construction period.
3/ Includes $1,154 due to higher than anticipated construction bids for channels and relocations from National City Boulevard to San Diego Bay; $16 for adjustment in recreation cost sharing; and $69 for Engineering and Design and $12 for Supervision and Administration due to reanalysis of requirements.

4 FEB 1986 1590

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	RELOCATIONS	3,473,000	2,239,000	192,000	1,042,000	
2	FISH AND WILDLIFE	697,000				697,000
3	PRESERVATION	(531,000)				(531,000)
4	MITIGATION	(166,000)				(166,000)
5	CHANNELS	16,401,000	2,342,000	5,614,000	5,899,000	2,546,000
6	RECREATION FACILITIES	2,101,000				2,101,000
7	ENGINEERING AND DESIGN	2,448,000	2,015,000	207,000	184,000	42,000
8	SUPERVISION AND ADMINISTRATION	670,000	453,000	63,000	75,000	79,000
9						
10						
11	TOTAL COST (Fed Funds and Non-Fed					
12	Contrib)	25,790,000	7,049,000	6,076,000	7,200,000	5,465,000
13	Undelivered Orders		76,000	-76,000		
14	TOTAL OBLIGATIONS (Fed Funds and					
15	Non-Fed Contrib)		7,125,000	6,000,000	7,200,000	5,465,000
16						
17	FEDERAL FUNDS					
18	TOTAL COST	24,600,000	7,049,000	6,076,000	7,200,000	4,275,000
19	Undelivered Orders		76,000	-76,000		
20	TOTAL OBLIGATIONS		7,125,000	6,000,000	7,200,000	4,275,000
21						
22	NON-FEDERAL CONTRIBUTIONS					
23	TOTAL COST	1,190,000				1,190,000
24	Undelivered Orders (None)					
25	TOTAL OBLIGATIONS					1,190,000
26						
27	METHOD OF FINANCING					
28	FEDERAL FUNDS					
29	ALLOCATIONS		7,125,000	6,000,000	7,200,000	4,275,000
30	UNOBLIGATED CARRYOVER FROM PRIOR YEAR					
31	TOTAL FUNDS AVAILABLE FOR OBLIGATIONS			6,000,000		
32	APPROPRIATIONS REQUIRED				7,200,000	4,275,000
33						

EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: LOS ANGELES | REGION: CALIF-SOUTH PACIFIC | BASIN: SOUTH COASTAL | PROJECT: SWEETWATER RIVER, CALIFORNIA

4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM (a)	PROJECT COST ESTIMATE (b)	TOTAL TO 30 SEP 1985 (c)	CURRENT FY 1986 (d)	BUDGET FY 1987 (e)	BALANCE TO COMPLETE AFTER FY 1987 (f)
1	NON-FEDERAL					1,190,000
2	CASH CONTRIBUTIONS	1,190,000				
3	OTHER COSTS	15,110,000	9,065,000	3,891,000	2,154,000	
4	LANDS AND DAMAGES	(8,440,000)	(6,286,000)	(0)	(2,154,000)	
5	RELOCATIONS	(6,670,000)	(2,779,000)	(3,891,000)	(0)	
6	TOTAL NON-FEDERAL COST	16,300,000	9,065,000	3,891,000	2,154,000	1,190,000
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EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: LOS ANGELES | REGION: CALIF-SOUTH PACIFIC | BASIN: SOUTH COASTAL | PROJECT: SWEETWATER RIVER, CALIFORNIA

4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Walnut Creek, California (Continuing)

LOCATION: The project is located on Walnut Creek and on the lower reaches of its principal tributaries, Pacheco, Grayson, San Ramon, Las Trampas, and Galindo Creeks and the lower and upper reaches of Pine Creek in Contra Costa County, California, about 20 miles northeast of San Francisco.

AUTHORIZATION: 1960 Flood Control Act

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 5.5 to 1 at 2-7/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1964) was 1.3 to 1. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Federal Cost		$ 62,800,000	
Estimated Non-Federal Cost		24,700,000	
Cash Contribution	$ 5,000,000		
Other Costs	19,700,000		
Total Estimated Project Cost		$ 87,500,000	
Allocations to 30 September 1985		$ 38,856,000	
Conference Allowance for FY 1986		6,000,000	
Allocation for FY 1986		5,320,000 1/	
Allocations to Date		$ 44,176,000	70
Allocation Requested For FY 1987		$ 11,100,000	88
Scheduled Balance to Complete After FY 1987		7,524,000	
Unscheduled Balance to Complete After FY 1987		0	

STATUS (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Relocations	100	
Roads	90	Sep 1987
Channels	80	Sep 1988
Levees	100	
Flood Control Structures	100	
Permanent Operating Equipment	100	
Entire Project	80	Sep 1988

1/ Reflects $680,000 reduction assigned as savings and slippage.

Division: South Pacific

District: Sacramento

Region: California - South Pacific
Walnut Creek, California

4 FEB 1986

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PHYSICAL DATA

Levees: Average Height - 6 Feet
Length - 13.8 Miles

Relocations: R.R. Bridges - Two ($935,000)

Design Capacities:
Walnut Creek -
Suisun Bay to Grayson Cr. - 25,000 c.f.s.
Grayson Cr. to Pine Cr. - 22,500 c.f.s.
Pine Cr. to Head of Walnut Cr. - 22,000 c.f.s.
San Ramon Cr. at Walnut Cr.- 15,200 c.f.s.
Pine Cr. at Walnut Cr. - 9,300 c.f.s.
Pine Cr. above Galindo Cr. - 5,880 c.f.s.
Galindo Cr. at Pine Cr. - 3,850 c.f.s.
Upper Pine Cr. - 1,250 c.f.s. to 6,300 c.f.s.

Flood Control Structures:
Two Drop Structures
Two Energy Dissipating Structures (Stilling Basins)

Channel Improvements:
Unlined Earth Channel - 6.3 Miles
Covered Channel - 1.7 Miles
Concrete Lined Channel - 9.7 Miles
Rock Lined Channel - 4.1 Miles

JUSTIFICATION: The project will provide flood protection to residential, commercial, and agricultural lands within and adjacent to the urban and suburban areas of Walnut Creek (population 58,000), Concord (population 106,000), Pacheco and Vine Hill (population 6,500), and Pleasant Hill (population 27,500). Land use is rapidly evolving from agricultural use to suburban because the area is within commuting distance of the San Francisco Bay Area. The area to be protected comprises about 6,670 acres, with a total estimated value of approximately $1.8 billion for land and improvements and a population of about 114,100. The flood of February-April 1958, the largest of record, caused damages on the main stem estimated at $1.6 million. On the basis of current conditions of development and price levels, these damages would amount to about $9,150,000, all of which would be preventable by the project. Average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$15,240,000
Land Enhancement	1,460,000
	$16,700,000

FISCAL YEAR 1987: The requested amount of $11,100,000 will be applied as follows:

Continue Channel Improvements for Reach 2 San Ramon Bypass & Walnut Creek	$ 5,480,000
Initiate Channel Improvements for Reach 3 San Ramon Bypass & Walnut Creek	1,850,000
Initiate Access Ramp on San Ramon Bypass	100,000
Continue Channel Improvements for Upper Pine Creek	2,225,000
Engineering and Design	60,000
Supervision and Administration	1,385,000
Total	$11,100,000

Walnut Creek, California

4 FEB 1986 1594

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NON-FEDERAL COSTS: Local interests are required to make a cash contribution to the United States in the amount of 7.4 percent of the cost of construction; furnish all lands, easements, and rights-of-way for construction; accomplish alterations and relocations except railroad facilities; and maintain and operate each effective element of the work after completion of that element and all works after completion thereof. The estimated first cost to local interests are as follows:

Cash Contribution	$ 5,000,000
Lands and Damages	8,360,000
Relocations	10,720,000
Channel Cover	120,000
Channel Dredging	500,000
Total	$24,700,000 1/

1/ Local interests expended approximately $3,000,000 for flood control in the project area during the period 1955-1965. In addition, local developers have made channel improvements for Upper Pine Creek currently valued at $5,050,000.

The annual cost for operation, maintenance, and replacement is estimated at $360,000.

STATUS OF LOCAL COOPERATION: The State of California officially adopted the project by Chapter 211 of the Statutes of 1961. Satisfactory assurances of local cooperation, including evidence of financial and legal ability to fulfill the requirement for the cash contribution were received from the Contra Costa County Flood Control and Water Conservation District on 28 March 1963. Required cash contributions totaling $2,605,000 have been furnished to the Corps through Fiscal Year 1985 to cover local interest costs.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $62,800,000 is a decrease of $5,300,000 from the latest estimate ($68,100,000) submitted to Congress. This change includes a decrease of: $8,400,000 for adjustments in the estimated inflation allowance through the construction period, partially offset by increases of $66,000 for higher price levels and $3,034,000 for adjustment in cost distribution for completed work.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement was filed with CEQ 27 July 1977. A Final Supplemental Environmental Impact Statement for the remaining reaches on Walnut and San Ramon Creeks was submitted to EPA 13 August 1984. For the Upper Pine Creek reach, the Final Supplemental Environmental Impact Statement was submitted to EPA 24 December 1985.

4 FEB 1986

Walnut Creek, California

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For the first phase of Lower Pine and Galindo Creeks, the provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation completed on 19 December 1979, a Public Notice issued on 19 December 1979, a Certification issued by the State of California on 24 April 1980, and the District Engineer's signature on the Section 404 Report on 4 April 1980. State Certification was received 28 April 1982 for the final phase of Pine and Galindo Creeks.

The provisions of Section 404 of the Clean Water Act for the remaining reaches of Walnut and San Ramon Creeks have been met by the Section 404(b)(1) Evaluation completed in September 1983, a Public Notice issued in September 1983, and a Certification issued by the State of California on 25 January 1984. The provisions of Section 404 of the Clean Water Act for Upper Pine Creek will be met by a Nationwide permit scheduled for May 1986.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1962 and for construction in FY 1964.

Contra Costa County Flood Control and Water Conservation District and the city of Walnut Creek requested that recreation be added as a project purpose. Engineering studies to modify the authorized project to include recreational development will be completed in FY 1987.

1596

4 FEB 1986 1596

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: San Francisco

Project: Walnut Creek, California

	Estimates Presented to Congress ($1,000)				
	Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Changes (4)	Current (5)
Federal Cost (Price Level)	21,300 (Jul 62)		68,100 1/		62,800 1/ 2/
Reason for Change		(46,800) 1/		(-)(5,300) 2/	
a. Price Escalation		42,368		(-)8,334	
b. Design Changes		1,166			
c. Additional Function Added Under General Authorization		12,370			
d. Authorized Modification					
e. Post-Contract Award and Other Estimating Adjustments		(-)11,790		3,034 3/	
f. Schedule Changes		2,686			
g. Sundry					
h. Real Estate					

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes a reduction of $8,400 for adjustment in the estimated inflation allowance through the construction period.
3/ Includes increase due to adjustment in cost distribution for completed work.

Walnut Creek, California

4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM (a)	PROJECT COST ESTIMATE (b)	TOTAL TO 30 SEP 1985 (c)	CURRENT FY 1986 (d)	BUDGET FY 1987 (e)	BALANCE TO COMPLETE AFTER FY 1987 (f)
1	RELOCATION	935,000	935,000			
2	ROADS	345,000	235,000		110,000	
3	CHANNELS	53,220,000	29,510,000	5,830,000	10,520,000	7,360,000
4	LEVEES & FLOODWALLS	865,000	865,000			
5	DIVER STRUCTURES	835,000	835,000			
6	PERM OPER EQUIPMENT	10,000	10,000			
7	ENGINEERING AND DESIGN	6,690,000	6,330,000	250,000	65,000	45,000
8	SUPERVISION AND ADMINISTRATION	4,900,000	2,366,000	340,000	1,495,000	699,000
9						
10	TOTAL COST (Fed Funds and					
11	Non-Fed Contrib)	67,800,000	41,086,000	6,420,000	12,190,000	8,104,000
12	Undelivered Orders		239,000	(-)39,000	(-)200,000	
13	TOTAL OBLIGATIONS (Fed Funds and		41,325,000	6,381,000	11,990,000	8,104,000
14	Non-Fed Contrib)					
15						
16	FEDERAL FUNDS					
17	TOTAL COST	62,800,000	38,481,000	5,495,000	11,300,000	7,524,000
18	Undelivered Orders		222,000	(-)22,000	(-)200,000	
19	TOTAL OBLIGATIONS		38,703,000	5,473,000	11,100,000	7,524,000
20						
21	NON-FEDERAL CONTRIBUTIONS					
22	TOTAL COST	5,000,000	2,605,000	925,000	890,000	580,000
23	Undelivered Orders		17,000	(-)17,000		
24	TOTAL OBLIGATIONS		2,622,000	908,000	890,000	580,000
25						
26	METHOD OF FINANCING					
27	FEDERAL FUNDS					
28	ALLOCATIONS		38,856,000	5,320,000 1/		
29	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			153,000		
30	TOTAL FUNDS AVAILABLE FOR OBLIGATION			5,473,000		
31	APPROPRIATIONS REQUIRED				11,100,000	7,524,000
32						
33	1/ Reflects $680,000 reduction assigned as savings and slippage.					

EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF-SOUTH PACIFIC | BASIN: SAN FRANCISCO BAY | PROJECT: WALNUT CREEK, CALIFORNIA

4 FEB 1986 1598

REPORT'S CONTROL SYMBOL DAEN-CWB-13

APPROPRIATION TITLE CONSTRUCTION, GENERAL | CLASSIFICATION LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	NON-FEDERAL					
2	CASH CONTRIBUTIONS	5,000,000	2,605,000	925,000	890,000	580,000
3	OTHER COSTS	19,700,000	8,575,000	11,125,000	0	0
4	LANDS AND DAMAGES	(8,360,000)	(3,860,000)	(4,480,000)		
5	RELOCATIONS	(10,720,000)	(4,075,000)	(6,645,000)		
6	OTHER-CHANNEL COVER	(120,000)	(120,000)	(0)		
7	OTHER-CHANNEL DREDGING	(500,000)	(500,000)	(0)		
8	TOTAL NON-FEDERAL COST	24,700,000	11,180,000	12,050,000	890,000	580,000
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EFFECTIVE DATE 1 JAN 86 | DIVISION SOUTH PACIFIC | DISTRICT SACRAMENTO | REGION CALIF-SOUTH PACIFIC | BASIN SAN FRANCISCO BAY | PROJECT WALNUT CREEK, CALIFORNIA

4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Wildcat and San Pablo Creeks, California (Continuing)

LOCATION: The project is located in the vicinity of San Pablo and Richmond, Contra Costa County, California, about 20 miles northeast of San Francisco, California.

AUTHORIZATION: Section 201 of the 1965 Flood Control Act (Authorized 1976)

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is 1.3 to 1 at 6-7/8 percent. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1980) was 1.2 to 1. The benefit-cost ratio was based on the project functioning independently. (See OTHER INFORMATION)

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost	STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Estimated Federal Cost		$17,600,000		Channels	Not Started	Sep 1990
Estimated Non-Federal Cost		13,300,000		Levees		Sep 1990
Cash Contribution	$ 1,500,000			Cultural Resource		
Other Costs	11,800,000			Preservation		Sep 1986
Total Estimated Project Cost		$30,900,000		Entire Project		Sep 1990
Allocations to 30 September 1985		$ 1,930,000				
Conference Allowance for FY 1986		1,700,000				
Allocation for FY 1986		1,200,000 1/				
Allocations to Date		$ 3,130,000	18			
Allocation Requested for FY 1987		$ 4,000,000	41			
Scheduled Balance to Complete After FY 1987		10,470,000				
Unscheduled Balance to Complete After FY 1987		0				

1/ Reflects $500,000 transfer from the project and includes $650,000 temporarily withheld pending execution of Local Cooperation Agreement.

Division: South Pacific District: Sacramento Region: California-South Pacific

Wildcat and San Pablo Creeks, California

4 FEB 1986

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PHYSICAL DATA

Wildcat Creek Channel Improvements:		
Channel Excavation & Levee Improvements	6,000	L.F.
Rectangular Concrete Channel	1,300	L.F.
Open Trapezoidal Concrete Channel	8,000	L.F.
Concrete Box Culvert	800	L.F.
Sediment Basin	600	L.F.
	16,700	L.F.

San Pablo Creek Channel Improvements:		
Channel Excavation & Levee Improvements	9,100	L.F.
Rectangular Concrete Channel	1,400	L.F.
Reinforced Concrete Box	1,200	L.F.
	11,700	L.F.

Design Capacities:		
Wildcat Creek	2,300	c.f.s.
San Pablo Creek	5,100	c.f.s.

JUSTIFICATION: Wildcat and San Pablo Creeks flow through the cities of San Pablo and Richmond and the unincorporated area of North Richmond. Development of the basins consists of densely populated residential, commercial and industrial areas, mostly in the lower reaches. The 1985 population of the combined basins was approximately 100,000, of which 90 percent live in San Pablo Creek basin and 10 percent live in Wildcat Creek basin. Present value of improvements in the area to be protected is $262,000,000. Flooding within the urban area and lower reaches on Wildcat and San Pablo Creeks occurs almost every year as a result of sinuous alignment, insufficient channel capacities, debris jams, and inadequate culverts and bridges. Severe floods have occurred eight times in the last 26 years, approximately once every three years. The flood of record, estimated to be a 30 year event, occurred in January 1982 and caused damages of about $2.7 million. The project will provide a high degree of flood protection, protect human life, reduce flood damage to residential and commercial and industrial property. Average annual benefits are as follows:

Benefits	Amount (1 October 1985)
Flood Control	$ 2,170,000
Area Redevelopment	100,000
	$ 2,270,000

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FISCAL YEAR 1987: The requested amount of $4,000,000 will be used as follows:

Continue Levee and Channel Construction Downstream Reach (Reach I) of Wildcat & San Pablo Creeks	$3,300,000
Engineering and Design	450,000
Supervision and Administration	250,000
Total	$4,000,000

NON-FEDERAL COSTS: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, rights-of-way, and material disposal areas, presently estimated at $6,640,000; modify or relocate buildings, utilities, roads, and other facilities, except railroad bridges, where necessary in the construction of the project, presently estimated at $5,160,000; pay 5 percent of the costs allocated to flood control, presently estimated at $1,500,000, and bear all costs of operation, maintenance, and replacement of flood control facilities, presently estimated at $134,000 annually.

STATUS OF LOCAL COOPERATION: By Resolution 73-466 dated 25 June 1973, the Board of Supervisors of Contra Costa County agreed to assume the obligations of local cooperation. Later, the Contra Costa County Board of Supervisors reaffirmed sponsorship by Resolution 76-960 dated 9 November 1976. The Contra Costa County Flood Control & Water Conservation District Board of Supervisors formed an Assessment District on 3 August 1982 which assures the availability of funds for the local share of the non-Federal portion of project costs, for a modified plan of improvement. A Local Cooperation Agreement satisfying all requirements of Section 221, Flood Control Act of 1970, Public Law 91-611 and consistent with the cost sharing and financing concepts agreed to by the Administration and Senate Majority Leadership is scheduled to be executed by June 1986.

COMPARISON OF FEDERAL COST ESTIMATES: The current cost estimate of $17,600,000 is an increase of $700,000 from the latest estimate ($16,900,000) submitted to Congress. This change includes increases of $760,000 for an estimated inflation allowance from 1 October 1985 through the construction period, $450,000 for changes in design resulting from adoption of a channel plan in lieu of the previously proposed greenbelt and levee floodway plan, $44,000 for addition of cultural resource preservation, and $1,451,000 for Engineering and Design and $35,000 for Supervision and Administration due to reanalysis of requirements; partially offset by decreases of $540,000 for reclassification of recreation facilities to a "Deferred" category, and $1,500,000 for adjustment in Federal costs in accordance with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

1602

Wildcat and San Pablo Creeks, California

4 FEB 1986 1602

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The final Environmental Impact Statement was submitted to CEQ on 7 June 1976. A supplemental Environmental Impact Statement was submitted to EPA on 20 December 1985.

The provisions of Section 404 of the Clean Water Act are scheduled to be met by a Section 404(b)(1) Evaluation on 30 November 1984, a Public Notice issued on 4 December 1985, a Certification from the State of California in May 1986, and the District Engineer's signature on the Section 404 Report in June 1986.

OTHER INFORMATION: Initial preconstruction planning funds were appropriated in FY 1977. Construction funds were appropriated in FY 1980.

The Contra Costa County Flood Control and Water Conservation District proposed a modification to the previous Corps plan which is similar to the National Economic Development Plan. The District's proposed plan had virtually the same alignment as the previous Corps plan, but required less right-of-way as a result of reducing levee construction along both creeks. The current plan incorporates the features requested by the District and includes channelization in lieu of the previously proposed greenbelt and levee floodway plan. The plan adversely impacts approximately 28 acres of riparian habitat and wetland marsh and two Federally listed endangered species, the California Clapper Rail and the Salt Marsh Harvest Mouse. To compensate for this impact, the proposed plan contains mitigation measures indorsed by the U.S. Fish and Wildlife Service including planting native vegetation on 32 acres of project lands, planting on levees and channel side slopes, and channel modifications through the marsh.

Project recreation facilities have been reclassified to a "Deferred" category due to lack of local support.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: Sacramento

Project: Wildcat and San Pablo Creeks, California

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	12,350 (Oct 78)		16,900		17,600 1/
Reason for Change	(4,550)			(700) 1/	
a. Price Escalation	4,550			760	
b. Design Changes				494 2/	
c. Additional Function Added Under General Authorization					
d. Authorized Modification				(-)540 3/	
e. Post-Contract Award and Other Estimating Adjustments				(-)14 4/	
f. Schedule Changes					
g. Sundry					
h. Real Estate					

1/ Includes $760 allowance for estimated inflation from 1 October 1985 through the construction period.
2/ Includes increases of $450 for changes in design resulting from adoption of a channel plan in lieu of the previously proposed greenbelt and levee floodway plan and $44 for addition of cultural resource requirements.
3/ Reclassification of recreation facilities to a "Deferred" category.
4/ Reflects a decrease of $1,500 for adjustment in Federal cost consistent with cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership; and increases of $1,451 for Engineering and Design and $35 for Supervision and Administration due to reanalysis of requirements.

4 FEB 1986 1604

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	CHANNELS	13,380,000		450,000	3,250,000	9,680,000
2	LEVEES	1,010,000		50,000	350,000	610,000
3	CUL RES PRESERVATION	130,000		130,000		
4	ENGINEERING AND DESIGN	3,360,000	1,603,000	597,000	450,000	710,000
5	SUPERVISION AND ADMINISTRATION	1,220,000	180,000	120,000	250,000	670,000
6						
7	TOTAL COST (Fed Funds and					
8	Non-Fed Contrib)	19,100,000	1,783,000	1,347,000	4,300,000	11,670,000
9	Undelivered Orders		75,000	-75,000		
10	TOTAL OBLIGATIONS (Fed Funds and		1,858,000	1,272,000	4,300,000	11,670,000
11	Non-Fed Contrib)					
12						
13	FEDERAL FUNDS					
14	TOTAL COST	17,600,000	1,783,000	1,347,000	4,000,000	10,470,000
15	Undelivered Orders		75,000	-75,000		
16	TOTAL OBLIGATIONS		1,858,000	1,272,000	4,000,000	10,470,000
17						
18	NON-FEDERAL CONTRIBUTIONS					
19	TOTAL COST	1,500,000			300,000	1,200,000
20	Undelivered Orders (None)					
21	TOTAL OBLIGATIONS				300,000	1,200,000
22						
23	METHOD OF FINANCING					
24	FEDERAL FUNDS					
25	ALLOCATIONS		1,930,000	1,200,000 1/		
26	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			72,000		
27	TOTAL FUNDS AVAILABLE FOR OBLIGATION			1,272,000		
28	APPROPRIATIONS REQUIRED				4,000,000	10,470,000
29						
30						
31	1/ Reflects $500,000 transfer from the project and includes $650,000 temporarily withheld pending execution of					
32	Local Cooperation Agreement					
33						

EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF-SOUTH PACIFIC | BASIN: SAN FRANCISCO BAY | PROJECT: WILDCAT & SAN PABLO CREEKS, CALIFORNIA

4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL

CLASSIFICATION: LOCAL PROTECTION (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM (a)	PROJECT COST ESTIMATE (b)	TOTAL TO 30 SEP 1985 (c)	CURRENT FY 1986 (d)	BUDGET FY 1987 (e)	BALANCE TO COMPLETE AFTER FY 1987 (f)
1	NON-FEDERAL					
2	CASH CONTRIBUTIONS	1,500,000			300,000	1,200,000
3	OTHER COSTS	11,800,000			3,500,000	8,300,000
4	LANDS AND DAMAGES	(6,640,000)			(2,000,000)	(4,640,000)
5	RELOCATIONS	(5,160,000)			(1,500,000)	(3,660,000)
6	OTHER	(0)			(0)	(0)
7	TOTAL NON-FEDERAL COST	13,300,000			3,800,000	9,500,000
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EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF-SOUTH PACIFIC | BASIN: SAN FRANCISCO BAY | PROJECT: WILDCAT & SAN PABLO CREEKS, CALIFORNIA

6 FEB 1986

1606

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APPROPRIATION TITLE: Construction, General - Reservoirs (Flood Control)

PROJECT: Little Dell Lake, Utah (Continuing)

LOCATION: The project is located about 8 miles east of Salt Lake City, on Dell Creek upstream of Mountain Dell Reservoir in Salt Lake County, Utah.

AUTHORIZATION: 1968 Flood Control Act and 1976 Water Resources Development Act.

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio for the full scale project is 3.0 to 1 at 3-1/4 percent. The preliminary remaining benefit-remaining cost ratio for the reduced scope project now under design is about 4.3 to 1 at 3-1/4 percent. The benefit-cost ratio for the fiscal year for which Congress apppropriated initial construction funds (FY 1985) was 2.2 to 1. The benefit-cost ratio was based on the project functioning independently.

SUMMARIZED FINANCIAL DATA

Estimated Federal Cost			$50,300,000
Scheduled Construction		$25,000,000 1/	
Unscheduled Construction		25,300,000	
Estimated Non-Federal Cost			44,200,000
Scheduled Construction		$20,000,000 1/	
Cash Contribution	$17,600,000		
Other Costs	2,400,000		
Unscheduled Construction		$24,200,000	
Cash Contribution	$23,000,000		
Other Costs	1,200,000		
Total Estimated Scheduled Construction Cost			$45,000,000 1/
Total Estimated Unscheduled Construction Cost			$49,500,000
Total Estimated Project Cost			$94,500,000

STATUS: (1 Jan 85)	PERCENT COMPLETE	COMPLETION SCHEDULE
Relocations	Not started	Jun 1988
Reservoir		Sep 1990
Dam		Sep 1990
Roads		Sep 1990
Recreation Facilities		Unsched
Permanent Operating Equipment		Sep 1990
Entire Project		Sep 1990

1/ The estimates shown for scheduled work reflect preliminary estimates of the cost of a reduced scope project requested by local interests.

Division: South Pacific

District: Sacramento

4 FEB 1986

Region: Great Salt Lake
Little Dell Lake, Utah

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SUMMARIZED FINANCIAL DATA (CONT)

		Accum. % of Est. Fed. Cost	
Allocations to 30 September 1985	$ 2,810,000		
Conference Allowance for FY 1986	0		
Potential Allocation for FY 1986	1,440,000 1/		
Potential Allocations through FY 1986	4,250,000	8	
Allocation Requested for FY 1987	$ 2,900,000	14	1/ Based on the current project schedule.
Scheduled Balance to Complete After FY 1987	17,850,000		
Unscheduled Balance to Complete After FY 1987	25,300,000		

PHYSICAL DATA 2/

Dam:
- Type - Earthfill
- Height - 255 feet (226 feet)
- Length - 2,250 feet (1,700 feet)

Lands and Damages:
- Acres - 824 (550)
- Type - Grazing, Forest, Natural Habitat along River

Lake Capacity:
- Municipal Water Supply, Recreation, and Flood Control Storage 27,000 ac-ft (18,000 ac-ft)
- Inactive Storage 3,000 ac-ft (3,000 ac-ft)
- Gross Storage 30,000 ac-ft (21,000 ac-ft)

Spillway:
- Type - Detached, Ungated, and Unlined
- Crest Length - 100 feet (100 feet)
- Capacity - 11,700 c.f.s (12,000 c.f.s.)

Relocations:
- Roads - 1.9 Miles - $3,140,000 (1.9 Miles - $3,400,000)
- Pipelines - 6,800 feet - $520,000 (10,000 feet - $365,000)
- Utility Line - 1,430 feet - $40,000 (1,870 feet - $35,000)

Recreation:
- Acres - 290 (Uncertain)
- Facilities for picnicking, fishing, boating, biking/hiking trails, parking, and restrooms

2/ Reduced scale project physical data, where available, based on preliminary design studies, is shown in parenthesis.

4 FEB 1985 1608

1608

JUSTIFICATION: The project will provide flood protection to about 1,500 acres of residential, commercial, and industrial property in Salt Lake City. Floods of April - May 1952 and May 1983 caused estimated damages in urban areas of $2.6 million and $10 million, respectively. Under current conditions of development and prices, the 1952 flood damages would amount to about $109 million, most of which would be preventable by the Little Dell Lake project. The 1983 flood damages would have amounted to about $135 million, had there not been an around-the-clock floodfight by a large number of local volunteers. It is estimated that the project would reduce nearly 90 percent of the flood damages in existing urbanizing areas, while providing a supplemental annual water supply of about 5,500 acre-feet for municipal and industrial use for the Salt Lake City area. Current projections indicate the water supply will be urgently needed by 1990. The project will also provide recreational opportunities for boating, swimming, picnicking, camping, and fishing. Average annual benefits are as follows:

Benefits	Full Scale Project Amount (1 October 1985)	Reduced Scale Project Amount (1 October 1985)
Flood Control	$ 5,800,000	$ 5,670,000
General Recreation	3,500,000	-
Municipal & Industrial Water Supply	1,140,000	700,000
	$10,440,000	$ 6,370,000

FISCAL YEAR 1987: The requested amount of $2,900,000 will be applied as follows:

Initiate Relocation of State Highway 65	$1,690,000
Initiate Relocation of Utilities	240,000
Engineering and Design	650,000
Supervision and Administration	320,000
Total	$ 2,900,000

NON-FEDERAL COSTS: Consistent with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, for the reduced scope project local interests will be required to provide lands, easements, and rights-of-way, presently estimated at $2,400,000; pay all costs allocated to municipal and industrial water supply, presently estimated at $12,000,000 for construction and $49,000 annually for operation, maintenance, and major replacements; pay one-half of the separable and joint costs allocated to recreation, if this purpose is included in the reduced scale project, and bear all costs of operation, maintenance, and replacement of recreation facilities; and pay 17.7 percent of the costs allocated to flood control, presently estimated at $5,600,000, and bear all costs of operation, maintenance, and replacement of flood control facilities, presently estimated at $101,000 annually. Local interests have also agreed to make all required payments and voluntary contributions concurrently wih project construction. (See STATUS OF LOCAL COOPERATION)

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STATUS OF LOCAL COOPERATION: As a result of the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, the County of Salt Lake and Metropolitan Water District of Salt Lake City have proposed a scaled-back project based on their ability to pay." The Board of Directors of the Metropolitan Water District of Salt Lake City voted to support the reduced scale project on 16 January 1986. The Corps of Engineers is currently evaluating the proposed plan for safety, environmental impacts, and economic viability and is scheduled to complete the evaluation of this modified project in May 1986. In accordance with the Fiscal Year 1985 Supplemental Appropriations Act (Public Law 99-88), a written agreement satisfying all the requirements of Section 221, Flood Control Act of 1970 (Public Law 91-611), will be obtained from the non-Federal sponsor and executed prior to 30 June 1986.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $50,300,000 is an increase of $6,100,000 from the latest estimate ($44,200,000) submitted to Congress. This change includes $1,770,000 based on higher price levels to 1 October 1985; $5,200,000 for an estimated inflation allowance from 1 October 1985 through the construction period; $820,000 for redesign of spillway and dam resulting from changed hydrologic conditions; $60,000 for Engineering and Design and $90,000 for Supervision and Administration based on reanalysis of requirements; partially offset by a decrease of $1,300,000 for reduced scope of recreation facilities and $540,000 for reduced recreation land requirements. The reduced scale project cost estimate of about $25,000,000, excluding future inflation, would be a reduction of $25,300,000 from the current estimate.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT: The Final Environmental Impact Statement was submitted to CEQ 22 July 1975.

The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation completed on 15 December 1978, a Public Notice issued on 21 March 1979, a Certification issued by the State of Utah on 3 March 1981, and the District Engineer's signature on the Section 404 Report on 14 January 1985.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1970. Funds to initiate construction were appropriated in the FY 1985 Supplemental Appropriations Act.

The non-Federal sponsors have proposed a smaller project at the Little Dell site which would be affordable to them. This reduced scope project would provide for construction of a dam about 226 feet high, which would create a lake with total storage capacity of about 21,000 acre feet. The Corps of Engineers is currently evaluating this proposal to determine whether it is economically viable, engineeringly feasible, and environmentally appropriate. The Corps expects to complete this evaluation by May 1986.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: Sacramento

Project: Little Dell Lake, Utah

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	44,200 1/ (Oct 83)		44,200 1/ (Oct 83)		50,300 1/ 2/
Reason for Change				(6,100) 1/	
a. Price Escalation				6,970	
b. Design Changes				(-)480 2/	
c. Additional Function Added Under General Authorization					
d. Authorized Modification					
e. Post-Contract Award and Other Estimating Adjustments				150 3/	
f. Schedule Changes					
g. Sundry				(-)540 4/	
h. Real Estate					

1/ Includes $5,200 allowance for estimated inflation from 1 October 1985 through the construction period.
2/ Reflects increases of $820 for redesign of spillway and dam, offset by a decrease of $1,300 for reduced scope of recreation facilities.
3/ Reflects increase of $60 for Engineering and Design and $90 for Supervision and Administration based on reanalysis of requirements.
4/ Decrease based on reduced requirement for recreation lands.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL

CLASSIFICATION: RESERVOIR (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	RELOCATIONS	3,590,000			3,590,000	
2	RESERVOIRS	330,000				330,000
3	DAMS	69,290,000				69,290,000
4	ROADS	1,010,000				1,010,000
5	RECREATION FACILITIES	4,170,000				4,170,000
6	BLDGS GNDS UTILITIES	780,000				780,000
7	PERM OPER EQUIPMENT	420,000				420,000
8	ENGINEERING AND DESIGN	6,040,000	2,259,000	1,093,000	1,210,000	1,478,000
9	SUPERVISION AND ADMINISTRATION	5,270,000	398,000	500,000	600,000	3,772,000
10						
11	TOTAL COST (Fed Funds and					
12	Non-Fed Contrib)	90,900,000	2,657,000	1,593,000	5,400,000	81,250,000
13	Undelivered Orders		50,000	-50,000		
14	TOTAL OBLIGATIONS (Fed Funds and					
15	Non-Fed Contrib)		2,707,000	1,543,000	5,400,000	81,250,000
16						
17	FEDERAL FUNDS					
18	TOTAL COST	50,300,000 1/	2,657,000	1,593,000	2,900,000	43,150,000
19	Undelivered Orders		50,000	-50,000		
20	TOTAL OBLIGATIONS		2,707,000	1,543,000	2,900,000	43,150,000
21						
22	NON-FEDERAL CONTRIBUTIONS					
23	TOTAL COST	40,600,000			2,500,000	38,100,000
24	Undelivered Orders (None)					
25	TOTAL OBLIGATIONS				2,500,000	38,100,000
26						
27						
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EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: GREAT SALT LAKE | BASIN: GREAT BASIN | PROJECT: LITTLE DELL LAKE, UTAH

4 FEB 1986

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REPORTS CONTROL SYMBOL DAEN-CWB-11

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: RESERVOIR (FLOOD CONTROL)

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1966 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	METHOD OF FINANCING					
2	FEDERAL FUNDS					
3	ALLOCATIONS		2,810,000	1,440,000 2/		
4	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			103,000		
5	TOTAL FUNDS AVAILABLE FOR OBLIGATION			1,543,000		
6	APPROPRIATIONS REQUIRED				2,900,000	43,150,000
7						
8	NON-FEDERAL					
9	CASH CONTRIBUTIONS	40,600,000			2,500,000	38,100,000
10	OTHER COSTS	3,600,000			400,000	3,200,000
11	LANDS AND DAMAGES	(3,600,000)			(400,000)	(3,200,000)
12	RELOCATIONS	(0)			(0)	(0)
13	OTHER	(0)			(0)	(0)
14	TOTAL NON-FEDERAL COST	44,200,000 1/			2,900,000	41,300,000
15						
16						
17						
18	1/ Studies are currently underway to develop a smaller project. A preliminary cost estimate for this project					
19	is about $45,000,000 of which $25,000,000 is Federal cost and $20,000,000 is Non-Federal cost					
20	2/ Based on the current project schedule.					
21						
22						
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EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: GREAT SALT LAKE | BASIN: GREAT BASIN | PROJECT: LITTLE DELL LAKE, UTAH

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APPROPRIATION TITLE: Construction, General - Multiple-Purpose Projects Including Power

PROJECT: New Melones Lake, California (Continuing)

LOCATION: The project is located on Stanislaus River about 35 miles northeast of the city of Modesto.

AUTHORIZATION: 1944 and 1962 Flood Control Acts

BENEFIT-COST RATIO: The remaining benefit-remaining cost ratio is not applicable because the project is nearing completion. The benefit-cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1966) was 2.2 to 1. The benefit-cost ratio was based on the project's fair share of San Joaquin River Basin system benefits.

SUMMARIZED FINANCIAL DATA			Accum. % of Est. Fed. Cost
Estimated Total Appropriation Requirement		$382,000,000	
Future Non-Federal Reimbursement	-213,000,000		
Estimated Federal Cost (Ultimate)		$169,000,000	
Estimated Non-Federal Cost		213,000,000	
Reimbursement: Irrigation	$105,900,000		
Power	107,100,000		
Total Estimated Project Cost		$382,000,000	
Allocations to 30 September 1985		$341,438,000	
Conference Allowance For FY 1986		4,200,000	
Allocation for FY 1986		5,900,000 1/	
Allocations to Date		$347,338,000	91
Allocation Requested for FY 1987		$ 1,900,000	91
Scheduled Balance to Complete After FY 1987		0	
Unscheduled Balance to Complete After FY 1987		32,762,000 2/	

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Lands and Damages	91	Sep 1987
Relocations	100	
Reservoirs	90	Sep 1986
Dams	100	
Fish and Wildlife	33	Sep 1987
Powerplant	100	
Roads	100	
Recreation Facilities	92 2/	Dec 1986
Cultural Resources	87	Sep 1987
Buildings, Grounds and Utilities	50 3/	Jun 1986
Permanent Operating Equipment	100	
Closure		Aug 1978
Power on Line		Apr 1979
Entire Project	97 2/	Sep 1987

1/ Amount includes a $200,000 transfer to the project for powerhouse repairs, $3,000,000 provided in Conference Allowance, and $1,500,000 proposed for transfer from other projects for development of recreation facilities at total Federal cost which has been temporarily withheld pending approval of the specific facilities proposed for construction. (See OTHER INFORMATION)

2/ Remaining recreation facilities are not scheduled pending appropriation of funds.

3/ Reflects unscheduled reservoir area Administration Building, date reflects currently scheduled activities.

Division: South Pacific District: Sacramento Region: California-South Pacific

New Melones Lake, California

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PHYSICAL DATA

Dam: Type - Earth and Rockfill
Height - 625 feet
Length - 1,560 feet

Spillway: Type - Ungated, Broad-Crested Weir
Crest Length - 200 feet
Capacity - 112,000 c.f.s.

Power: Number of Units - 2
Installed Capacity - 300,000 kw
Maximum Head - 583 feet

Lands and Damages: Acres - 34,678
Type - Grazing, Forest, Wasteland and Natural Habitat Along River
Improvements - Rural Dwellings and Ranch Buildings
(Payment for depreciated original cost of existing Melones Powerplant (PG&E Co.) $1,311,000)

Lake Capacity:

Irrigation, Power, Recreation, Fish and Wildlife, Water Quality, and Flood Control Storage (including Flood Control Reservation of 450,000 acre-feet)	2,090,000 ac-ft
Inactive Storage	310,000 ac-ft
Gross Storage	2,400,000 ac-ft

Relocations: Roads - 4.4 miles (Including 2 bridges, aggregate length about 3,400 feet) (State, County, and private) ($29,510,000); Miscellaneous Utilities ($550,000)

JUSTIFICATION: The project is providing urgently needed power to California, a firm irrigation water supply, flow augmentation for fish and wildlife, improvement of water quality for the Stanislaus and San Joaquin Rivers and the Sacramento-San Joaquin Delta, water oriented recreation opportunities at the lake and downstream channel and an adequate degree of flood protection on the Stanislaus and Lower San Joaquin Rivers. Flood protection is being provided to about 35,000 acres of highly developed agricultural land; to suburban areas of Ripon, Oakdale, and Riverbank (combined population 20,200); to two main line railroads and State Highway 99; and to several State and County roads. Flood damages along the Stanislaus River during the 1955 flood amounted to $1,928,000 below the damsite. However, were such a flood to occur under current conditions of development and prices, damages amounting to $10,690,000 in that area would result, all of which would have been prevented by the project. Damages on the San Joaquin River below the mouth of Stanislaus River and in the Sacramento-San Joaquin Delta during the 1955 flood amounted to $4,115,000. Under current conditions of development and prices, these damages would amount to about $24,100,000, of which about $11,500,000 would be prevented by operation of New Melones Lake project. During the 1983-84 flood season, damages prevented by the project amounted to about $13,400,000. In conjunction with storage projects on Tuolumne River and authorized levees on Lower San Joaquin River, the project provides flood protection to about 50,000 acres of agricultural land along San Joaquin River below the mouth of the Stanislaus River, about 185,000 acres of intensively cultivated land in the Sacramento-San Joaquin Delta, suburban areas south of the city of Stockton, and numerous commercial and water installations. Coordinated with other reservoirs of the Central Valley Project of the Bureau of Reclamation, the project provides about 285,000 acre-feet of new water per year, on the average, for diversion to the local service areas and for export (of water surplus to local needs) to the southern San Joaquin Valley. Average annual benefits are as follows:

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Benefits	Amount (1 October 1985)
Flood Control	$ 5,850,000
Irrigation	3,610,000
Power Generation	21,800,000
General Recreation	6,690,000
Fish and Wildlife	5,620,000
Water Quality Control	180,000
Area Redevelopment	1,950,000
	$45,700,000

FISCAL YEAR 1987: The requested amount of $1,900,000 will be applied as follows:

Continue Land Acquisition	$ 295,000
Initiate and Complete Fish and Wildlife Facilities	230,000
Initiate and Complete Knight's Ferry Covered Bridge Renovation	450,000
Engineering and Design	560,000
Supervision and Administration	365,000
Total	$ 1,900,000

NON-FEDERAL COSTS: Local interests are required to reimburse the Federal Government for costs allocated to irrigation. Reimbursable first cost for irrigation is estimated at $105,900,000. Reimbursable portion of annual maintenance, operation, and replacement costs for irrigation is estimated at $489,000. Costs allocated to power are also reimbursable. The capital cost allocated to power is estimated at $107,100,000 and allocated annual operation, maintenance and replacement (OM&R) costs are estimated at $1,556,000. Information furnished by the Bureau of Reclamation indicates that estimated revenues are sufficient to recover these capital costs plus interest and annual costs of OM&R within the administratively determined repayment period of 50 years. In addition, local interests have expended $300,000 for levees along the lower reaches of the Stanislaus River.

STATUS OF LOCAL COOPERATION: Recovery of costs allocated to irrigation and power is the responsibility of the Bureau of Reclamation. Reimbursement of costs is in accordance with the Bureau's policies and procedures for the Central Valley Project.

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New Melones Lake, California

Local interests are required to maintain private levees and to prevent encroachment on the existing channel and floodway between the levees on the Stanislaus River from Goodwin Dam to the San Joaquin River. The State of California officially adopted this project by Chapter 918 of the Statutes of 1963, and by Chapter 1438 of those statutes authorized the State Reclamation Board to furnish assurances satisfactory to the Secretary of the Army that these local cooperation requirements will be met. By letter dated 6 January 1983 the State Reclamation Board provided formal assurances of local cooperation.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $382,000,000 is a decrease of $1,000,000 from the latest estimate ($383,000,000) submitted to Congress. This change includes decreases of $525,000 for adjustments in the estimated inflation allowance through the construction period; $320,000 for reduced scope of work and contingencies for Lower Stanislaus minimal recreation facilities; $530,000 due to reduced scope of work and $350,000 as a result of a favorable bid for Reservoir Clearing; $1,530,000 for County Road 123A relocation due to Stanislaus County performing the relocation at another site; $1,200,000 for Reservoir Administration Building based on more detailed design; and $100,000 for reduced contingencies on Glory Hole recreation contract. These decreases were partially offset by increases of $500,000 for settlement of real estate claims; $150,000 for power house repairs; $90,000 for downstream hazard removal; $300,000 for water facilities for Lower Stanislaus River Administration Building; $450,000 for addition of the Knights Ferry Covered Bridge cultural resource renovation; $905,000 for refinement of prior inadequate estimates on previously unscheduled Lower Stanislaus recreation areas; and $825,000 in Engineering and Design and $335,000 in Supervision and Administration due to reanalysis of remaining requirements.

STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: The Final Environmental Impact Statement was submitted to CEQ 17 July 1972. Supplemental data required by the Federal District Court was submitted to CEQ 24 January 1973. Final Supplement which covers the relocation of Camp Nine Road was filed with EPA on 18 March 1977.

The provisions of Section 404 of the Clean Water Act do not apply, because the uncompleted portions of project improvements do not involve the placement of fill material or the discharge of dredged material into the waters of the United States.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in FY 1964 and for initial construction in FY 1966.

A Memorandum of Understanding between the Department of the Interior and the Department of the Army transferring the New Melones Dam and Reservoir from the Corps of Engineers to the Bureau of Reclamation was executed on 20 November 1979. The agreement provides that the Corps complete land acquisition actions and retain budgeting, design and construction responsibility for remaining construction.

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OTHER INFORMATION: (Cont'd)

Provisions relative to New Melones Lake project in the FY 1985 Supplemental Appropriations Act (Public Law 99-88) are as follows: "The Secretary of the Army is directed to construct recreation facilities at New Melones Lake project at full Federal expense, in accordance with Public Law 98-360 (H. Rept. 98-866) using funds heretofore or hereafter provided." As directed, the additional recreational facilities will be constructed at full Federal expense with the funds provided in Fiscal Year 1986 including the following: Upgrade of sanitary facilities at Glory Hole; paving of roads at Glory Hole, Mark Twain, and Tuttletown; and construction along the Lower Stanislaus River at McHenry, Knights Ferry, and Two Mile Bar.

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: Sacramento

Project: New Melones Lake, California

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	122,000 (Jul 64)		383,000 1/		382,000 2/
Reason for Change		(261,000) 1/		(-)(1,000) 2/	
a. Price Escalation		105,109		(-)525	
b. Design Changes		57,927			
c. Additional Function Added Under General Authorization		1,110			
d. Authorized Modification		22,805			
e. Post-Contract Award and Other Estimating Adjustments		42,365		(-)975 3/	
f. Schedule Changes					
g. Sundry		20,755			
h. Real Estate		10,929		500 4/	

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes $525 reduction for adjustments in the estimated inflation allowance through the construction period.
3/ Reflects decreases of $320 for reduced scope of work and contingencies for Lower Stanislaus River minimal facilities, $530 due to reduced scope of work and $350 as a result of a favorable bid for reservoir clearing, $1,530 for County Road 123A relocation due to Stanislaus County performing the relocation at another site, $1,200 on the Reservoir Administration Building reflecting final design estimate and $100 for reduced of contingencies on Glory Hole recreation contract, partially offset by increases of $150 for powerhouse repairs; $90 for downstream hazard removal; $300 for water facilities for Lower Stanislaus Administration Building; $450 for renovation of covered bridge at Knights Ferry; and $905 for refinement of prior inadequate estimates on previously unscheduled Lower Stanislaus River recreation areas and $825 for Engineering and Design and $335 for Supervision and Administration due to reanalysis of remaining requirements.
4/ Settlement of real estate claims.

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New Melones Lake, California

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REPORTS CONTROL SYMBOL DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: MULTI-PURPOSE INCL POWER

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	LANDS AND DAMAGES	29,710,000	26,965,000	250,000	295,000	2,200,000
2	RELOCATIONS	30,060,000	30,060,000			
3	RESERVOIR	6,130,000	5,370,000	650,000		140,000
4	DAMS	172,050,000	172,050,000			
5	FISH & WILDLIFE FACILITIES	400,000	170,000		230,000	
6	POWER	39,150,000	39,000,000	150,000		
7	ROADS	7,250,000	7,250,000			
8	RECREATION FACILITIES	45,760,000	16,440,000	3,530,000	630,000	25,160,000
9	CUL RES PRESERVATION	3,505,000	3,055,000		450,000	
10	BLDGS GNDS UTILITIES	5,230,000	2,390,000	240,000		2,600,000
11	PERM OPER EQUIPMENT	1,050,000	1,050,000			
12	ENGINEERING AND DESIGN	26,165,000	23,725,000	725,000	560,000	1,155,000
13	SUPERVISION AND ADMINISTRATION	15,540,000	13,302,000	336,000	365,000	1,537,000
14						
15	TOTAL COST (Fed Funds and					
16	Non-Fed Contrib)	382,000,000	340,827,000	5,881,000	2,530,000	32,762,000
17	Undelivered Orders		440,000	190,000	- 630,000	
18	TOTAL OBLIGATIONS (Fed Funds and					
19	Non-Fed Contrib)		341,267,000	6,071,000	1,900,000	32,762,000
20						
21	FEDERAL FUNDS					
22	TOTAL COST	382,000,000	340,827,000	5,881,000	2,530,000	32,762,000
23	Undelivered Orders		440,000	190,000	- 630,000	
24	TOTAL OBLIGATIONS		341,267,000	6,071,000	1,900,000	32,762,000
25						
26	NON-FEDERAL CONTRIBUTIONS					
27	TOTAL COST					
28	Undelivered Orders (None)					
29	TOTAL OBLIGATIONS					
30						
32						
33						

EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: SACRAMENTO | REGION: CALIF-SOUTH PACIFIC | BASIN: SAN JOAQUIN | PROJECT: NEW MELONES LAKE, CALIFORNIA

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: MULTI-PURPOSE INCL POWER

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	METHOD OF FINANCING					
2	FEDERAL FUNDS					
3	ALLOCATIONS		341,430,000	5,900,000 1/		
4	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			171,000		
5	TOTAL FUNDS AVAILABLE FOR OBLIGATION			6,071,000		
6	APPROPRIATIONS REQUIRED				1,900,000	32,762,000 2/
7						
8	NON-FEDERAL					
9	CASH CONTRIBUTIONS					
10	OTHER COSTS					
11	LANDS AND DAMAGES					
12	RELOCATIONS					
13	OTHER					
14	TOTAL NON-FEDERAL COST	0				
15						
16						
17						

18 1/ Amount includes a $200,000 transfer to the project for powerhouse repairs, $3,000,000 provided in
19 Conference Allowance, and $1,500,000 proposed for transfer from other projects for development of recreation
20 facilities at total Federal cost which has been temporarily withheld pending approval of the specific
21 facilities proposed for construction.
22 2/ Remaining recreation facilities are not scheduled pending appropriation of funds.
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EFFECTIVE DATE	DIVISION: SOUTH PACIFIC	REGION: CALIF-SOUTH PACIFIC	PROJECT: NEW MELONES LAKE, CALIFORNIA
1 JAN 86	DISTRICT: SACRAMENTO	BASIN: SAN JOAQUIN	

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APPROPRIATION TITLE: Construction, General - Local Protection (Flood Control)

PROJECT: Los Angeles County Drainage Area (Los Angeles River), California (Major Rehabilitation) (Continuing)

LOCATION: The project is located in Los Angeles County, California, within and along the Los Angeles River between Sepulveda Dam and Stewart and Gray Road, in and near the cities of Burbank, Glendale and Los Angeles.

AUTHORIZATION: Flood Control Acts of 1936, 1937, 1938, 1941 and 1950.

BENEFIT-COST RATIO: The remaining benefit - remaining cost ratio is not applicable because monetary benefits have not been quantified.

SUMMARIZED FINANCIAL DATA		Accum. % of Est. Fed. Cost
Estimated Federal Cost	$29,700,000	
Estimated Non-Federal Cost	0	
Cash Contribution $ 0		
Other Costs 0		
Total Estimated Project Cost	$29,700,000	
Allocations to 30 September 1985	$11,520,000	
Conference Allowance for FY 1986	11,800,000	
Allocation for FY 1986	7,700,000 1/	
Allocations to Date	19,220,000	65
Allocation Requested for FY 1987	$ 8,900,000	95
Scheduled Balance to Complete After FY 1987	1,580,000	
Unscheduled Balance to Complete After FY 1987	0	

STATUS: (1 Jan 86)	PERCENT COMPLETE	COMPLETION SCHEDULE
Channel Rehabilitation	60	Sep 1987

PHYSICAL DATA

Remedial Work
Los Angeles River Channel:
Trapezoidal and rectangular concrete-lined channel - 13.9 miles
Trapezoidal earth-bottom channel - 0.9 miles
Invert and low flow channel - 19.8 miles
Subdrain system - 8.2 miles

1/ Reflects $4,100,000 reduction assigned as savings and slippage.

Division: South Pacific

District: Los Angeles

Region: California-South Pacific

Los Angeles County Drainage Area (Los Angeles River), California

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PRESENT CONDITION: Due to erosion several major project features have reached a point of advanced deterioration. Over the years, floodflows and perennial low flows have eroded the concrete on the low flow channel to such an extent that steel reinforcement and holes penetrating the low flow channel are visible in many locations. Repairs have been completed on the channel sideslopes in the Sepulveda Dam basin and the entire length of the low flow channel.

JUSTIFICATION: The Los Angeles River, a major flood control channel, is the backbone of the Los Angeles County flood control system. The project features, which are maintained by the Corps of Engineers, were essentially completed during the late 1930's and 1940's. Since construction, it has prevented flood damages estimated at $3.6 billion (October 1985) by providing flood protection to the greater Los Angeles metropolitan area. The reaches currently under rehabilitation pass through highly urbanized sections of the cities of Burbank, Glendale and Los Angeles. Without the continued protection of the Los Angeles River flood control system, a vast amount of commercial and residential property could be destroyed.

FISCAL YEAR 1987: The requested amount of $8,900,000 will be applied as follows:

Complete rehabilitation of channel	$8,035,000
Engineering and Design	390,000
Supervision and Administration	475,000
Total	$8,900,000

NON-FEDERAL COSTS: None.

STATUS OF LOCAL COOPERATION: None required.

COMPARISON OF FEDERAL COST ESTIMATES: The current Federal cost estimate of $29,700,000 is a decrease of $13,900,000 from the latest estimate ($43,600,000) submitted to Congress. This change is due to decreases of $2,700,000 for adjustments in the estimated inflation allowance through the construction period, $1,693,000 due to favorable bids, $6,884,000 due to reduced quantities, $488,000 for lower unit costs, $2,750,000 for reduced contingencies, and $510,000 Engineering and Design and $550,000 Supervision and Administration based on costs to date and reanalysis of remaining requirements. These decreases were partially offset by increases of $75,000 for higher price levels and $1,600,000 for additional work identified during detailed design studies.

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STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT: An Environmental Assessment was completed in December 1983 with a Finding of No Significant Impact.

The provisions of Section 404 of the Clean Water Act do not apply, because the project improvements do not involve the placement of fill material or the discharge of dredged material into the waters of the United States.

OTHER INFORMATION: The 1982 reconnaissance report and General Design Memorandum, approved in May 1984, were funded with Operation and Maintenance, General funds. Initial major rehabilitation funds were appropriated in FY 1984.

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: South Pacific
District: Los Angeles

Project: Los Angeles County Drainage Area (Los Angeles River), California

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	46,800 1/ (Oct 82)		43,600 1/		29,700 1/ 2/
Reason for Change		(-)(3,200) 1/		(-)(13,900) 2/	
a. Price Escalation		(-) 3,200		(-) 2,625	
b. Design Changes					
c. Additional Function Added Under General Authorization					
d. Authorized Modifications					
e. Post-Contract Award and Other Estimating Adjustments		1,705		(-) 11,275 3/	
f. Schedule Changes					
g. Sundry		(-) 1,705			
h. Real Estate					

1/ Includes an allowance for estimated inflation through the construction period.
2/ Includes a reduction of $2,700 for adjustments in the estimated inflation allowance through the construction period.
3/ Reflects decreases of $1,693 due to favorable bids, $6,884 due to reduced quantities, $488 for lower unit costs, $2,750 for reduced contingencies, and $510 for Engineering and Design and $550 for associated Supervision and Administration based on costs to date and reanalysis of remaining requirements. These decreases were partially offset by an increase of $1,600 for additional work identified during detailed design studies.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION, GENERAL | CLASSIFICATION: MAJOR REHABILITATION

SUMMARY CONSTRUCTION PROGRAM (PB-1)
FISCAL YEARS 1986 AND 1987

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 1985	CURRENT FY 1986	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 1987
	(a)	(b)	(c)	(d)	(e)	(f)
1	CHANNELS	25,670,000	9,170,000	6,885,000	8,035,000	1,580,000
2	ENGINEERING AND DESIGN	2,090,000	1,180,000	520,000	390,000	
3	SUPERVISION AND ADMINISTRATION	1,940,000	925,000	540,000	475,000	
4						
5	TOTAL COST (Fed Funds Only)	29,700,000	11,275,000	7,945,000	8,900,000	1,580,000
6	Undelivered Orders		202,000	-202,000		
7	TOTAL OBLIGATIONS (Fed Funds Only)	29,700,000	11,477,000	7,743,000	8,900,000	1,580,000
8						
9	FEDERAL FUNDS					
10	TOTAL COST	29,700,000	11,275,000	7,945,000	8,900,000	1,580,000
11	Undelivered Orders		202,000	-202,000		
12	TOTAL OBLIGATIONS		11,477,000	7,743,000	8,900,000	1,580,000
13						
14	NON-FEDERAL CONTRIBUTIONS					
15	TOTAL COST	0				
16	Undelivered Orders (None)					
17	TOTAL OBLIGATIONS					
18						
19	METHOD OF FINANCING					
20	FEDERAL FUNDS					
21	ALLOCATIONS		11,520,000	7,700,000 1/		
22	UNOBLIGATED CARRYOVER FROM PRIOR YEAR			43,000		
23	TOTAL FUNDS AVAILABLE FOR OBLIGATION			7,743,000		
24	APPROPRIATIONS REQUIRED				8,900,000	1,580,000
25						
26	NON-FEDERAL					
27	CASH CONTRIBUTIONS	0				
28	OTHER COSTS	0				
29	LANDS AND DAMAGES					
30	OTHER					
31	TOTAL NON-FEDERAL COST	0				
32						

33 1/ Reflects $4,100,000 assigned as savings and slippage.

EFFECTIVE DATE: 1 JAN 86 | DIVISION: SOUTH PACIFIC | DISTRICT: LOS ANGELES | REGION: CALIF-SOUTH PACIFIC | BASIN: SOUTH COASTAL

PROJECT: LOS ANGELES COUNTY DRAINAGE AREA, (LOS ANGELES RIVER), CALIFORNIA

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SOUTH PACIFIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation

a. Channels and Harbors

The program request of $29,607,000 provides for essential maintenance work on 24 channel and harbor projects named in the list which follows. The work to be accomplished under this activity consists of maintaining the navigation channels and harbors of coastal harbors and waterways by means of dredging, snagging, bank protection, breakwater and jetty repairs, and operation and repair of navigation facilities, as authorized in the laws adopting river and harbor projects.

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
California				
Crescent City Harbor	1,102,700	4,379,000	455,000	Breakwater repairs in FY 85 and FY 86.
Dana Point Harbor	16,900	0	355,000	Periodic dredging in FY 87.
Humboldt Harbor and Bay	6,076,300	4,451,000	2,318,000	Breakwater repairs in FY 85 and FY 86.
Los Angeles-Long Beach Harbors	969,100	862,000	1,457,000	Breakwater repairs in FY 85 and FY 86; periodic dredging in FY 87.
Los Angeles-Long Beach Harbor Model	130,000	135,000	140,000	
Marina Del Rey	0	20,000	1,175,000	Periodic dredging in FY 87.
Moss Landing Harbor	177,700	27,000	740,000	Periodic dredging in Fy 87.
Noyo River and Harbor	450,900	559,000	380,000	Variation in dredging requirements.
Oakland Harbor	1,334,400	1,250,000	1,624,000	Variation in dredging requirements; repairs to railroad bridge in FY 87.
Oceanside Harbor	0	149,000	480,000	Variation in dredging requirements.
Oceanside Experimental Sand Bypass System	1,153,300	5,601,000	1,918,000	Development phase of Experimental Bypass System construction in FY 85 and FY 86; first year operation and monitoring in FY 87.
Petaluma River	55,700	0	3,225,000	Periodic dredging in FY 87.

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SOUTH PACIFIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation (Cont'd)

a. Channels and Harbors (Cont'd)

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
California (Cont'd)				
Richmond Harbor	621,700	1,140,000	1,745,000	Variation in dredging requirements.
Sacramento River (30 ft Project)	1,793,500	179,000	545,000	Variation in dredging requirements.
Sacramento River Shallow Draft Channel	35,500	93,000	63,000	Periodic inspection of bascule bridge FY 86; repair lock FY 87.
Sacramento River and Tributaries (Debris Control)	650,200	677,000	675,000	
San Francisco Bay-Delta Model Structure	1,176,200	1,204,000	1,029,000	Replace skylight and roof repairs in FY 85 and FY 86.
San Francisco Harbor	2,063,900	1,682,000	1,370,000	Variation in dredging requirements.
San Joaquin River	625,200	403,000	2,013,000	Variation in dredging requirements.
San Pablo Bay and Mare Island Strait	1,737,900	3,699,000	4,640,000	Variation in dredging requirements.
Santa Barbara Harbor	324,400	784,000	800,000	Variation in dredging requirements.
Suisun Bay Channel	206,700	0	760,000	Variation in dredging requirements.
Ventura Marina	1,628,100	627,000	1,690,000	Variation in dredging requirements.
Yuba River	28,800	32,000	10,000	Periodic channel and dike repairs in FY 85 and FY 86.
Other Projects Maintained Periodically	7,558,500	2,891,000		
TOTAL - Channels and Harbors	29,917,600	30,844,000	29,607,000	
b. Locks and Dams - None				
TOTAL - NAVIGATION	29,917,600	30,844,000	29,607,000	

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SOUTH PACIFIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control

a. Reservoirs

The program request of $21,053,000 provides for the operation and maintenance of 20 flood control projects and scheduling of flood control reservoir operations at operating publicly owned and Bureau of Reclamation projects in the Division. The estimate also includes the requirements for operation and maintenance of recreation facilities at reservoir projects. The amount requested is necessary for operation and ordinary maintenance of project facilities; labor, supplies, replacements; and contract law enforcement. The requested amount also includes construction of cost-shared recreation facilities at completed projects and application of special recreation use fees for recreation areas.

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
Arizona				
Alamo Lake	572,800	665,000	927,000	Dam safety assurance studies in FY 87.
Painted Rock Dam	751,600	653,000	676,000	Repair of outlet gates in FY 85.
Whitlow Ranch Dam	134,800	113,000	86,000	Condition and operation study in FY 85.
California				
Black Butte Lake	909,800	1,203,000	1,158,000	Minimal maintenance required in FY 85.
Buchanan Dam - H. V. Eastman Lake	813,700	1,070,000	1,350,000	Minimal maintenance required in FY 85; dam safety assurance studies in FY 87.
Coyote Valley Dam (Lake Mendocino)	1,492,800	1,873,000	1,567,000	Spillway repair in FY 86.
Dry Creek (Warm Springs) Lake and Channel	1,494,100	1,750,000	1,772,000	Expanded scope of recreation management in FY 86 and FY 87.
Farmington Dam	72,400	156,000	117,000	Minimal maintenance required in FY 85.
Hidden Dam - Hensley Lake	953,600	1,042,000	1,368,000	Dam safety assurance studies in FY 87.
Isabella Lake	3,454,700	2,853,000	1,880,000	Renovation of public use areas in FY 85 and FY 86.

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SOUTH PACIFIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

a. Reservoirs (Cont'd)

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
California (Cont'd)				
Los Angeles County Drainage Area	3,749,100	3,885,000	2,240,000	Repair work on channels in FY 85; upgrade water control data system in FY 86.
Merced County Stream Group	82,400	179,000	143,000	Minimal maintenance required in FY 85.
Mojave River Dam	277,500	603,000	172,000	Road repair in FY 85; outlet tunnel repairs in FY 86.
New Hogan Lake	1,540,300	1,123,000	1,145,000	Renovate public use facilities in FY 85.
Pine Flat Lake	1,465,500	1,629,000	1,795,000	
Santa Ana River Basin	2,080,900	2,007,000	1,608,000	Boundary monumentation and dam safety assurance studies in FY 85; upgrade water control data system in FY 86.
Success Lake	949,300	1,384,000	1,086,000	Dam safety assurance studies in FY 86.
Terminus Dam (Lake Kaweah)	680,400	1,407,000	1,188,000	Decreased recreation operation in FY 85; dam safety assurance studies in FY 86.
Nevada				
Martis Creek Lake	1,061,400	294,000	292,000	Repair seepage control works in FY 85.
Nevada and California				
Pine and Mathews Canyons Lakes	138,500	140,000	100,000	
Scheduling of Flood Control Operations	328,000	347,000	383,000	
TOTAL - Reservoirs	23,003,600	24,376,000	21,053,000	

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APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

2. Flood Control (Cont'd)

b. Channel Improvements, Inspections and Miscellaneous Maintenance

The program request of $866,000 provides for the inspection of completed works during the budget year.

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
Inspection of Completed Works	983,600	945,000	601,000	Dam safety assurance studies for Folsom Dam in FY 85 and FY 86.
Inspection of Completed PL 84-99 Works	159,000	233,000	265,000	
TOTAL - Channel Improvements, Inspections and Miscellaneous Maintenance	1,142,600	1,178,000	866,000	
TOTAL - FLOOD CONTROL	24,146,200	25,554,000	21,919,000	

3. Multiple Purpose Power Projects

The program request of $523,000 for the operation and maintenance of the channel below the multiple purpose New Melones Lake project provides the amount for operation requirements of recreation and natural resource facilities along the Stanislaus River downstream of the dam. The amount requested is necessary for operation and maintenance of downstream channel facilities; labor, supplies, materials, and parts required for the day-to-day functioning of the channel project.

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SOUTH PACIFIC DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

3. Multiple Purpose Power Projects (Cont'd)

Project	OBLIGATIONS Actual FY 1985 $	Estimated FY 1986 $	Estimated FY 1987 $	Explanation of Major Changes
California				
New Melones Lake (Downstream Channel)	470,400	573,000	593,000	
TOTAL - MULTIPLE PURPOSE	470,400	573,000	593,000	

4. PROTECTION OF NAVIGATION

The program request of $6,113,000 provides for accomplishing the work essential to the administration and enforcement of specific laws enacted for the protection of navigation, particularly Section 10, River and Harbor Act, 1899; Sections 402 and 404 FWPCA Amendment of 1972; Section 103 of Marine Protection Research and Sanctuary Act of 1972, involving the issuance and review of permits for discharges into navigable waters; and regulation activities of the California Debris Commission.

General Regulatory Functions	3,971,300	4,049,000	4,162,000	
Drift Removal (S.F. Harbor & Bay)	1,039,900	1,404,000	1,380,000	
Project Condition Surveys	156,700	576,000	571,000	Inspection and evaluation of coastal structures in FY 86 and FY 87.
TOTAL - PROTECTION OF NAVIGATION	5,167,900	6,029,000	6,113,000	
GRAND TOTAL - SOUTH PACIFIC DIVISION	59,702,100	63,000,000	58,232,000	

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SNAIL DARTER

Mr. BEVILL. If you need any advice on that beetle, you are looking at the snail darter authorities. The snail darter won in the U.S. Supreme Court, but we had the last word.

We built the Tellico Dam in Tennessee. If you need help, let us know.

Mr. Fazio and Mr. Rudd both have special interests here. I know they have a lot of questions. I will yield to Mr. Fazio.

Mr. FAZIO. Thank you, Mr. Chairman.

I knew I could count on you on that snail darter example. The elderberry longhorn beetle problem does not affect just that stretch of the river. We have a particular problem right across from Old Sacramento, and downtown Sacramento, on a piece of property the Corps has made available for sale because it no longer was absolutely essential for Corps activities.

We are having the Fish and Wildlife Service holding us up for this urban piece of property while there is habitat all along the river for miles and miles, simply over the question of this beetle.

I now appreciate your frustration, even more than I did when you were concerned about the Tellico Dam.

FLOOD FIGHT

We hope we don't have to get into that kind of tangle on the elderberry beetle. We will see. We don't think we can afford to do what you folks did, to go all the way to the Supreme Court. We appreciate very much the help of this committee, as you can see. Mr. Rudd and I do quite well when it comes to the regions that we represent.

I want to thank you all for the help that you have already indicated you are willing to provide in the context of this recent disaster which General Palladino has very ably outlined. I want to thank you and all of your staff throughout the State, particularly in the San Francisco and Sacramento regions, for the excellent job you did.

All of the Federal and State projects that are interrelated there—Corps, Bureau, DWR—exceeded their capacity. As a result, we came out of this with relatively—and it is a very exextensive amount of damage—but relatively little compared to the threat that you have outlined. I personally want to thank you for having given me the opportunity to come out and see these problems up close last Saturday.

I wonder if you could tell us what your current estimate of damage is, not from simply the standpoint of the Corps and project levees and Corps facilities, but any input you could give us about any other costs that occurred to the region.

Do you have anything you could add?

General PALLADINO. As far as the damage associated with the projects, sir, it is a bit early to tell. We have to wait for the water to recede and conduct the inspection of those facilities before we could give a reasonable estimate.

Mr. FAZIO. I think it is important to point out we do have some flood-fighting to continue to do. Tyler Island, for example, which

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still threatens Walnut Grove, many of these towns are in my district. I don't want to list them all.

It is still a Corps responsibility; is that correct? You are continuing to use Federal funds for flood-fighting there?

General PALLADINO. We are continuing to be involved in flood-fighting, yes, sir.

Mr. FAZIO. Is it your idea that the Tyler Island levees were maintained and adequate? It is your judgment that the high flows from the rivers overwhelmed it?

General PALLADINO. That is correct.

SACRAMENTO-SAN JOAQUIN DELTA

Mr. FAZIO. How long do you think the delta will continue to be in danger? This is not over down there. We are still having exceedingly high flows. With the warm weather, I always worry about premature melt-off from the Sierra. I don't know that that is an immediate problem, but I think we still have threatened levees in the delta.

General PALLADINO. I agree. I believe we have several months of concern remaining, assuming no further storm events.

Mr. FAZIO. That is an area that we have talked about in other contexts. Maybe since we are talking about delta problems, I wonder at this point if you could give us some update as to where we are in relation to the Bureau and the State of California in the overall question of strengthening those delta levees.

There is a discussion that continues to be waged—I think it will heat up after the gubernatorial election in California—about the use of the delta as a through-put facility for deliveries of water to Southern California.

I wonder what this year's budget contains and where we might be going in the future?

General PALLADINO. The budget contains funds to allow us to continue our activities in conjunction with the State of California and the Bureau of Reclamation. We are coordinating technical studies in association with the overall delta problem.

Mr. FAZIO. $250,000 in this year's budget?

General PALLADINO. That is correct.

Mr. FAZIO. Would that increase under your future budgets assuming some sort of agreement was reached? Is that what we are waiting for, an agreement between the State and Federal Government?

General PALLADINO. I think so. I think we have to define the overall plan. Once the State and Bureau of Reclamation define the water transport plan, we would then be in a position to finalize the flood control aspects being reviewed under the study authority. At that time, we would be able to define our future requirements.

SUPPLEMENTAL APPROPRIATIONS

Mr. FAZIO. Before I leave this subject of the delta and some of the other problems in the area, how long do you think it will be before we can come up with an estimate as to what the cost of this damage will be? We want to move the urgent supplemental appropriation to attempt to provide funds for FEMA. It is our hope we

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can also deal with problems related to Corps expenditures, Federal Highway Administration expenditures, maybe even some assistance through USDA to farmers who have lost their crops. Do you think you will be able to give us a figure in time to factor it in in full committee?

General PALLADINO. Sir, I believe it will be on the order of two months before we have a better estimate of damages as a result of this storm.

Mr. FAZIO. Do you think Corps' damages may be in the $25 million range? Does that seem reasonable to you? Is that high? Is that low?

General PALLADINO. That is a reasonable estimate at this time, sir.

Mr. FAZIO. That is just for Corps' facilities that you have continuing responsibility for, your flood-fighting costs?

General PALLADINO. That is associated with our costs for flood-fighting and rehabilitation of flood control structures damaged in the 1986 storm.

Mr. FAZIO. Actually, your levees held with the exception of the breakup near Linda, where Olivehurst and Linda, and Yuba County, were flooded. All the Corps' facilities performed up to specification. We did have some breaks potentially on the Robbins' side of the Sacramento River and down at Elkhorn further south on the east side. Those were quickly—I want to say, and give the Corps credit for this—plugged, and those problems did not become troublesome either at the airport or that community.

General PALLADINO. Yes, sir.

Mr. FAZIO. Outside of that, I think the Corps levees held; is that not correct?

General PALLADINO. That is correct, sir.

Mr. FAZIO. Have we learned anything from this particular disaster in terms of the level of maintenance we are providing? Do we need to renew, review, and perhaps with additional funds, increase the kind of levee maintenance program that we have? Do you think this shows that we are on target, doing what we need to do? Have we learned that perhaps the aging levees in some cases present us some problems that we may need to repair more frequently?

General PALLADINO. Sir, that may be necessary. We will conduct a review in the very near future looking at this experience to address that kind of question.

Mr. FAZIO. So we will be actively studying what we learned in this particularly historic storm?

I might point out we don't have any records to even indicate how to gauge this. We started talking 40-, 50-year. I think it is 100-year, at least. Maybe without dispute over that.

The staff indicates what I was concerned about. That is, that we need to know answers to these questions before the middle of April to proceed on this urgent supplemental. I think we ought to try to wrap all the costs, not just for California but Nevada, Utah, Colorado, the Northwest, any regions of the Northwest impacted by these storms, and by any follow-on requirements. I hope you will do what you can.

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We would like to put this through, if I can speak, perhaps personally—and I believe for many other members of our committee—on an urgent basis without getting entangled with a number of other issues which might slow it down or prevent its signing.

Do you understand my point? We want to move quickly and tie together all the costs of all the agencies involved. We would appreciate your cooperation.

General PALLADINO. Yes, sir.

DRY CREEK INTERIM STUDY

Mr. FAZIO. There are a couple of other activities that the Corps had been recently undertaking which were very clearly delineated in the slide presentation. Certainly, they were, to me, last Saturday, something that needed additional focus here.

One is the Dry Creek project which you budgeted $100,000 for. We learned of the problems in this area in the 1983 floods, which were not insignificant. Of course, we have a lot of development in this region that has impacted north Sacramento County. That has increased the jeopardy to a number of businesses and home owners, who now find themselves in areas that originally weren't supposed to be in flood plains but now frequently are.

I wonder how you view that study and what do you think it ultimately could cost, and how could we step it up? We have thousands of people that have their homes now in the very area we have just begun to look at for project purposes.

General PALLADINO. Sir, we are progressing fairly well on it. It could be accelerated up to five months.

Mr. FAZIO. Would we need additional funding to accomplish that? Do you have the capability to do it with existing funds?

General PALLADINO. There would be a requirement for additional funds.

Mr. FAZIO. This would require an increase in cost sharing for Sacramento County as well. If they wanted to expedite it, they would have to put up increasing amounts to match yours; is that right?

General PALLADINO. Yes, sir. Cost sharing would apply to any increase.

Mr. FAZIO. Is it $50,000 on the study?

General PALLADINO. Yes, sir.

Mr. FAZIO. Where would we go? How would we break up the construction on a project like this? Is that clear under existing law? Is that an issue for future determination? By omnibus authorization?

General PALLADINO. Sir, that would have to be determined in the future based on resolution of the cost sharing issue.

Mr. FAZIO. If we were to do it on the principle in place currently, what would the cost sharing be? Can you tell me, Ed?

Mr. O'NEILL. It would be based on lands, easements, rights-of-way and relocations, and there might be some applicable cash contributions.

MORRISON CREEK

Mr. FAZIO. What about Morrison Creek? That is a project that was kicking around for years. We were reminded of why it seemed

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to be important 20 years ago, probably by the tremendous flooding which flooded the entire stretch of I-5 between San Joaquin and Sacramento Counties. I think that road is still not in service.

This is the major interstate between San Diego and Seattle. The flooding of course, separated my district into two parts, which it remains in.

Could you tell us what the current plans are for Morrison Creek? My understanding is we funded it in the past, but there is no support requested in 1987.

General PALLADINO. That is correct, sir. At the present time, it is our understanding that the local sponsors are intending to proceed with some of that construction on their own. We are cooperating with them in that review.

Mr. FAZIO. We are getting into the same kind of syndrome we had in Fairfield where local developer fees, city and county activities preceded the Corps. Are we sure they are doing things to Corps standards? Are we able to make sure if, at some point in the future, we want to give them credit for prior funding, cost sharing, that we have a project that will stand the test the Corps wants it to?

General PALLADINO. I am sure our efforts would be addressing those points.

Mr. FAZIO. There would be no ability for them to proceed on a "Corps project" without meeting those standards? Do they have to sign agreements with you before local fees and taxes can be spent?

General PALLADINO. The project is not yet authorized. They could proceed on their own. Normally, we would have to have a signed agreement after the project was authorized before we could credit them with costs incurred on project construction.

Mr. FAZIO. I think we ought to try for the record to get some review of what actually has been spent on what portions of the original project. I would like to, if possible, find a way to expedite that and see whether or not the Corps doesn't have some interest in making this project finally come together.

I think John Moss pursued this as a Member of Congress when he first came here. I know he served 26 years. I have served eight. I think the project is probably needed more today because of all the urban development in that area than it was during the time it was initially proposed.

General PALLADINO. Yes, sir.

[The information follows:]

WORK ACCOMPLISHED BY LOCAL INTERESTS

The City and County of Sacramento estimate that they and local developers have expended about $4.2 million on construction of flood control improvements in the potential project area in Sacramento County since authorization of Phase I studies in 1976. They have also indicated that they intend to continue construction of flood control facilities that may ultimately be compatible with a Federally authorized project.

SACRAMENTO RIVER DEEP WATER SHIP CHANNEL

Mr. FAZIO. I would like to turn away from this issue and go to the Port of Sacramento. You did mention it and gave us quite a bit of information about it. I wondered if you could give us some feel

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for whether or not the agreement could be reached by the June 30 deadline?

General PALLADINO. We certainly hope it can, sir. We are proceeding in cooperation with the local sponsor on that premise.

Mr. FAZIO. What are the real issues dividing you? Could you make that available for us? Do you know offhand what they are?

General PALLADINO. Perhaps, sir, the major issue was associated with the construction schedule, and we have scheduled that now to accommodate the local sponsor's ability to contribute in cost sharing. I believe that issue is being satisfactorily resolved. It is being incorporated as part of the negotiation, the local cooperation.

Mr. FAZIO. You are talking about the local sponsor putting up $45 million; is that what I heard?

General PALLADINO. Yes, sir.

Mr. FAZIO. This was originally anticipated under the traditional cost-sharing arrangements to be about, what, eight, ten, six million? I guess that is how drastically we have changed our orientation on these kinds of projects. I can't think of a more dramatic example of what we are requiring local sponsors to do.

I wonder if they have the capability? Certainly, I doubt if the project would have been built originally—it has far exceeded its estimated benefits—if we had had that kind of cost-sharing arrangement at the time. Do you know whether they think they can come up with $45 million, almost half the total cost?

General PALLADINO. The negotiations are proceeding based upon that. Indications are that they will be.

Mr. FAZIO. And the hopeful enactment of a much more responsible and less onerous H.R. 6? Don't we assume in the background that further enactment of legislation might retroactively impact this project?

General PALLADINO. That is included, sir, in any contract.

Mr. FAZIO. This is a temporary agreement, should we pass some form of legislation to countermand it; isn't that correct?

General PALLADINO. That is correct.

SACRAMENTO RIVER, CHICO LANDING TO RED BLUFF

Mr. FAZIO. I note there is a little funding in the budget for Chico Landing to Red Bluff. You did touch on that.

Could you indicate what you think we could be doing to take care of the concerns about riparian habitat and fisheries? We have had tremendous reductions in salmon in the river and a number of other concerns. I think it is important to know exactly what it is that we are doing to try to accommodate our critics who would like to return to the meanderbelt concept, which says no riprapping, no maintenance, letting the river run wild.

General PALLADINO. The budget, sir, provides for environmental studies, continuation of environmental studies in cooperation with the local sponsor, addressing those problems. We believe they are well-articulated. We are moving forward, communicating with a variety of interests to help define and perhaps resolve some of the issues.

Mr. FAZIO. I have a number of specific questions on that specific issue. It really runs the whole Sacramento River with different

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types of problems, no-man's land—you know these areas as well as I do. Will the Corps or the State of California perform testing of alternative bank protection methods before significant new elements of the project are planned?

General PALLADINO. Sir, the State of California Reclamation Board is planning to construct a demonstration project using the Palisades System at Woodson Bridge State Park during the summer of 1986. No additional bank protection work is scheduled at this time.

Mr. FAZIO. You indicated in your report to the Committee that you had conveyed our 1986 guidance to the local sponsor. Does the Corps consider the Committee's report advice for Fiscal Year 1986 on the project to remain effective when and if construction begins again?

General PALLADINO. Sir, yes we do.

Mr. FAZIO. Will future contracts be rescoped to take new fishery and riparian research into account as opposed to multi-year contracts committed to fixed designs?

General PALLADINO. Sir, all remaining construction contracts will be scheduled for initiation and completion in a single construction season. Design for these contracts will take into consideration the latest fishery and riparian findings derived from monitoring of mitigation efforts undertaken previously.

Mr. FAZIO. The House Appropriations Committee Report for Fiscal Year 1986 directed that the Corps not initiate further construction activity until the local sponsor voluntarily agreed to replace spawning gravel if its supply is curtailed by the riprapping, replace salmon which are lost as a result of the project, assure that the 30-foot easements are policed against abuse, and purchase lands to mitigate for project impacts on fish and wildlife. What is the status of agreement to these conditions?

General PALLADINO. Sir, the State of California Reclamation Board, in response to the Committee's directive, stated in a letter dated January 17, 1986 that it fully supports the project and intends to do whatever is necessary to continue the much needed work. The Board also indicated that it would support, philosophically and financially, any mitigation that is necessary for the project.

SAN LUIS REY RIVER

Mr. FAZIO. I would like to ask a question about the San Luis Rey flood control project. As you know, the City of Oceanside has already done some of the work on San Luis Rey. The project has been accommodated under a previous agreement with the Corps. I am wondering what your intentions are at this time on that project?

General PALLADINO. We are continuing in terms of reviewing the project. As you know, it was not eligible for consideration this year in view of the requirement that it be justified at a 10 percent interest rate.

Mr. FAZIO. If the date on which the work had been done was considered to be the official starting date of the project, when this

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local effort was undertaken, would the cost-benefit ratio have stayed above 1 to 1?

General PALLADINO. Yes, sir.

Mr. FAZIO. And we can't define the interest rate based on when those projects started?

General PALLADINO. Interest rates are frozen when construction funds are first appropriated, and that has not happened yet for this project. The policy this year called for it to be evaluated at a 10 percent rate.

Mr. FAZIO. This year?

General PALLADINO. Sir, that was the selection criteria this year.

Mr. FAZIO. What changed here that made us drop this project? After all, these folks have been very much involved with this Committee. Claire Burgener, our friend who sat on this Committee for a long time, was very supportive, and continues to be, in attempting to work out problems as they relate to this area. Mr. Packard, a valued friend of this area, who serves on the Public Works Committee, is deeply concerned about it, I think I can say, as a representative of the area.

Do you want to give us background on the issue? We would like to finish it in a way that would make it satisfactory to all concerned.

General PALLADINO. The benefit-cost ratio is slightly greater than unity, calculated at 8⅝ percent interest rate. With the selection criteria being defined as a 10 percent interest rate, the BCR fell below unity. Hence, it was not selected.

Mr. FAZIO. It is tragic for the people who have been attempting to mitigate environmental concerns, accommodate local land owners who have become well-known to this committee. We have gone a long way to try to accommodate all the critics, and as a result delayed the project to the point we are now hit by a higher interest rate. It seems unfair to the people who are trying to do the right thing and not rush forward with a project that didn't satisfy all interests. I would hope we can find some way to help this community help itself.

Mr. MYERS. One for the environmentalists.

Mr. FAZIO. In this case, I don't think the environmentalists are the issue. I think adjacent land owners have interests of their own, which go closer to their pocketbook, rather than to the question of the environment. I just hope we can review this. The Committee may have further interest in this as we look and mark up our bill. I have some questions I will put in the record for my colleague, Mr. Thomas, regarding activities in the San Luis Obispo County area. I have other questions I will put in the record.

Questions Submitted by Congressman Thomas

PORT SAN LUIS

Question. What happened to the $600,000 appropriated to the Port San Luis project for Fiscal Year 1985.

Answer. $150,000 was allocated to conduct an investigation of the type and range of potential benefits. The remaining $450,000 was withheld pending the results of the economic study.

Question. What was accomplished with the $150,000 that was allocated to the Los Angeles District for the Port San Luis project?

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Answer. The funds are being used for review of potential economic benefits. A report will be completed this spring.

Question. How much money is needed to finish the Corps report for the Port San Luis project?

Answer. We have sufficient funds on hand to complete the economic report. The need for future funding to complete the reevaluation report will depend on the extent of Federal interest identified in the economic analysis.

SANTA ANA RIVER

Mr. FAZIO. I did want to conclude, though, by asking one series of questions on the Santa Ana River.

Are the upper and lower elements of the Santa Ana to proceed in tandem?

General PALLADINO. We are proceeding with design on the lower Santa Ana portion. The review of the alternatives on the upper element has been submitted to Washington to the Board of Engineers for Rivers and Harbors. Once reviewed and approved at the Washington level, and funded, we would then intend to proceed with design on the upper element as part of the overall plan.

Mr. FAZIO. We have a number of interests in Riverside and San Bernadino Counties, as well, that we want to accommodate. I have no doubt of the need for this project. It is a very expensive one but very necessary. If they were to experience the kind of floods we had in the Sacramento area, the damage in Orange County would be astronomical.

We estimated if we had a levee break on the south side of the American River, Dave Houston, the Regional Director of the Bureau, told me we could reach $1.5 billion on residential damages alone, not counting shopping centers. Orange County is equally built up in the same kind of way. The territory that could be flooded would be even larger. I don't have any desire to stop the project, but I hope that we do work with the upstream watershed people.

I wanted to ask, just to confirm, water conservation is being highly valued as they develop this project. Is that your understanding?

General PALLADINO. Yes, sir.

Mr. FAZIO. The Corps is satisfied?

General PALLADINO. The water conservation issue, sir, focuses at the present time on Prado reservoir in our cooperative effort with the Orange County representatives. There is no water conservation element associated with the upper element at the present time.

Mr. FAZIO. Would you be willing to give the committee any information you could derive which would show us where additional water conservation efforts could be cost beneficial in the entire project area?

General PALLADINO. Yes, sir, we will do that.

Mr. FAZIO. Thank you.

[The information follows:]

GROUND WATER RECHARGE IN THE SANTA ANA RIVER BASIN

Currently, about 95 percent of the Santa Ana River flows are allowed to percolate in locally constructed spreading grounds downstream of Prado Dam. These spreading grounds cover 760 acres and result in recharge infiltration of 225,000 acre feet per year. The local water district extracted over 50 percent of their 1984-1985 water requirements from the groundwater table. In the next 20 years, the water district

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plans to add another 240 acres of spreading grounds, increasing the acre feet of percolation to 280,000 per year.

There is a potential for 50,000 acre feet of water conservation storage at Prado Dam. A determination of the cost effective volume, and the impacts of higher reservior elevations, will be made following a water conservation study which will be funded by the Orange County Water District and conducted by the Corps of Engineers. There also appears to be potential for water conservation in the Santa Ana Basin above Prado Dam and below the proposed upstream alternative dam at the Upper Santa Ana site. This potential will be evaluated in future studies.

RILLITO RIVER

Mr. FAZIO. Thank you, Mr. Chairman.

Mr. BEVILL. Very good.

When you get Mr. Fazio and all the California problems solved, we may consider you for the Congressional Medal of Honor.

The Chair recognizes——

Mr. MYERS. I yield to Mr. Rudd. This is his area.

Mr. BEVILL. Mr. Myers yields to Mr. Rudd.

Mr. RUDD. Thank you.

I thank my colleague for yielding. Thank you, Mr. Chairman.

My colleague from the Fifth District of Arizona is interested in the Rillito River project we discussed earlier. I would appreciate a response to that.

General PALLADINO. We anticipate closing that study effort in June of this year, 1986.

INDIAN BEND WASH

Mr. RUDD. OK. That is good to know. Some of the most insurmountable problems we face in this nation are perceived to be beetles, and eagles on the Salt River, and the perception is truth, frequently. I think that that is also true with some of our water projects where there is tremendous opposition against them. If we can knock the perception out and bring facts in, the facts become truth and facts don't become perception; perception becomes truth but not facts.

That is a goal of mine, I know. I am sure it is yours and that of other people who are interested in seeing that water is treated properly as it is for the people across the country. For the last three years, we have almost achieved a R&D budget in the way of funding for Indian Bend Wash in Arizona. It has been my opinion we had an umbrella authority for it, and that opinion is not shared in the other body. I hope that this year we will have authorization as well as appropriation. The question is, since I know you have an interest in this, as well as everybody else who understands how important ground water is, what would the total cost of that project be?

General PALLADINO. Sir, we have no good, current estimate of that. We feel the order of magnitude would be $4 million to $6 million to do a ground water demonstration project at Indian Bend.

CLIFTON, ARIZONA

Mr. RUDD. We have a flood problem in Clifton, Arizona at the confluence of the San Francisco and Gila Rivers. I know you have been working on that in one way or the other for a long time. My

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question is, what is the cost estimate for that project to fix it the way it now stands?

General PALLADINO. Sir, we are scheduled to complete our study in March of 1987. Until we complete that, we would not be able to estimate any construction costs associated with any viable solutions.

Mr. RUDD. Assume it is feasible how long would it take to correct the problem?

General PALLADINO. Once authorized and funded for construction, it would be roughly another year for a design, and then a construction period which may amount to another year to two years, sir.

Mr. RUDD. About 2, 2½ years from start to finish once everything was settled and in place?

General PALLADINO. From the time of authorization and funding, we would anticipate that time frame, yes, sir.

TUBAC, ARIZONA

Mr. RUDD. A problem exists in the Tubac area en route to Amado, Arizona. How much funding will be needed to fix that problem?

General PALLADINO. Sir, we have authority under Section 14, continuing authority, to address that problem. Once the County of Santa Cruz locates and constructs the bridge, we will then proceed to accommodate the need on that particular project.

Mr. RUDD. That is on line?

General PALLADINO. Yes, sir. That is on line.

SANTA CRUZ RIVER

Mr. RUDD. What is the status of the reevaluation of the problem in the lower Santa Cruz River?

General PALLADINO. We are currently scheduled to complete that in March of 1987.

NAVAJO INDIAN RESERVATION

Mr. RUDD. Those are clean, crisp answers. Let me just talk to you a little bit about our problems with the Navajo Indian Reservation. Secretary Dawson is very acutely aware of the needs for the Corps to pursue the water development and flood control in these areas, which lie within my congressional district in Arizona. Because of the importance of such activities and economic development, I would like to have a commitment from you, as Division Commander, that you will work with us, with me and with the tribes to solve the problems that exist in those areas. I don't think you need an authorization for that.

General PALLADINO. To the extent within our authority, we will be pleased to do that.

Mr. RUDD. In 1976, the Congress authorized a flood control study of the Navajo Reservation, and the current cost is in about the $1.5 million range. The Navajos have expressed a willingness to engage in flood control, in cost sharing. They certainly have the capability of doing that.

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There is no request for funding on this project. I would like to know why, and how you will address that problem, and what you would do if funds were provided? Could you proceed?

General PALLADINO. Sir, as you stated, it is an authorized, unfunded study. There were relatively few new starts nationwide this year. This one was not selected as a new start. if funds were provided we would accomplish reconnaissance studies.

Mr. RUDD. Why wasn't it started? The priority wasn't there? Is that it?

General PALLADINO. I believe nationwide as we looked at the total needs, there were other studies that were accorded a higher urgency for resolution at this time.

NAZLINI WASH

Mr. RUDD. In that regard, you have the Nazlini project underway. Do you have enough money to complete that project?

General PALLADINO. Yes, sir, we do.

GANADO DAM

Mr. RUDD. The Ganado project in the same area, flood control project, you will be making a determination some time soon on that. Do you have a handle on the cost-benefit ratio on that yet?

General PALLADINO. Sir, we are scheduled to complete our study on that project in March of this year, next month. The preliminary indications are that a flood control project is not economically justified.

Mr. RUDD. That report will be coming out then, I presume?

General PALLADINO. We expect to have the study in my headquarters next month, sir.

Mr. RUDD. What can you tell me about the Hubbell Trading Post National Historical Site?

General PALLADINO. That was considered in the economic evaluation of that particular project.

Mr. RUDD. And the answer is?

General PALLADINO. With the consideration of that, it remained not economically justified, sir.

HOLBROOK, ARIZONA

Mr. RUDD. We have had problems for a long time in Holbrook and the levees there. It is my understanding that that is being held up. I don't know that that is the right terminology. It is lying fallow in headquarters here in Washington. What can you give me in the way of estimates on when that will be released and when they will act on the favorable recommendations on proceeding with that project?

General PALLADINO. Headquarters is now considering the issue of project deficiency. I expect that that decision will be made some time within the next three months.

Mr. RUDD. And the recommendation was favorable?

General PALLADINO. Sir, my recommendation was that it was a project deficiency.

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ARIZONA CANAL DIVERSION CHANNEL

Mr. RUDD. Thank you. The beautiful City of Phoenix, Arizona—and you had a photograph of that a moment ago on the wall—we have an issue that has become very emotional there. I know you are acquainted with just how emotional it is. It has to do with flood control.

We discovered that it is necessary—in the 1972, 1982 and 1983 flooding that took place there—in that area of Arizona and the flooding that has taken place since. We have provided some good flood control measures. The last flood control measure that has been agreed to by every city council that I know of, and by all the people involved, has to do with the ACDC area, and the emotions have been extremely high over the 40th Street area, which isn't a very long area but it has brought about a lot of high feeling because of the hotels, resort areas that are built around this particular area, and expensive homes, this sort of thing, claiming that the channel is going to be ugly and lower property values. We know flood control is absolutely necessary in the area. The Phoenix task force recently indicated to me verbally that they were considering the use of a mole, something like that, tunneling under 40th Street, through that whole area, to provide a tunnel which would handle the runoff. Have you ever considered one as a way to solve the problem?

General PALLADINO. Sir, in looking at the project, we do consider a variety of construction techniques which will provide the most economical solution. On this particular issue, we did not initially consider the use of a mole as a solution because it is relatively straightforward to use an open cut, the current method of construction.

Mr. RUDD. Did you not consider it because of the enormous costs?

General PALLADINO. Our engineering judgment leads us to believe a solution of that type would be considerably more expensive and not cost-competitive with the method contemplated.

Mr. RUDD. In a superflood, would the tunneling effect even handle that, or could you have enough control over it? Does that mean you would have to build a tunnel a mile in diameter? Is that a consideration that would have to be taken for an alternative resolution of the problem?

General PALLADINO. That is clearly an issue that has to be considered, sir.

Mr. RUDD. If such a clearly different solution were to be decided on, would that require additional congressional authorization? Or could you act under the authorization?

General PALLADINO. Sir, it may require additional authorization depending upon the specifics.

Mr. RUDD. On a clearly different design?

General PALLADINO. Depending how it would address the purpose and other factors associated with the authorization.

Mr. RUDD. What is the design you have settled on now?

General PALLADINO. Sir, the current design, speaking specifically of that reach, would involve an open cut. In some areas, it is covered. So it would be a channel constructed through an open cut and later covered along critical portions.

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Mr. RUDD. Are you in a position to consider a change in the design logically and reasonably, in view of the fact that a drastically changed design would require possible reauthorization, a long time for economic impact statements, and that sort of thing? Would you be in a position to change that design? I say that without asking whether or not you would recommend it. You are going to do whatever the decision is that you do. I understand that. Are these factors important enough that you would recommend changing the design drastically?

General PALLADINO. Sir, we are always, of course, open to ideas which would result in improvements. In the final analysis, our criteria is focused on least cost solutions.

Mr. RUDD. I think in line with what Chairman Bevill discussed on this particular project, we can expect all of the answers to it in September. Is that right?

General PALLADINO. That is correct, sir.

Mr. RUDD. I certainly thank you, General. Thank you for being here. I appreciate your cooperation. Thank you, Mr. Chairman.

Mr. BEVILL. The Chair recognizes Mr. Watkins.

Mr. WATKINS. I don't think Mr. Myers has spoken.

Mr. MYERS. I have questions for the record from other Members.

Representative Lagomarsino has some questions which we would like you to supply the answers for the record.

General PALLADINO. Yes, sir.

[The information follows:]

Questions Submitted by Congressman Lagomarsino

SANTA BARBARA COUNTY

Question. What is the cost to complete the reconnaissance study for the Santa Barbara County Beach Erosion study?

Answer. The cost to complete the reconnaissance phase of the study is $149,000.

Question. How soon could the study be completed?

Answer. It could be completed nine months following receipt of funds.

SANTA BARBARA HARBOR

Question. What would be the cost to complete the reconnaissance study for Santa Barbara Harbor?

Answer. The cost to complete the reconnaissance phase of the study is $220,000.

INTERNATIONAL ACTIVITIES

Mr. WATKINS. Mr. Chairman, I think you, Mr. Rudd and Mr. Fazio did an excellent job in discussing the South Pacific Division. General, I am concerned, are you doing any work in Mexico or other foreign areas?

General PALLADINO. No, sir.

Mr. WATKINS. Do you have any people that go into Mexico?

General PALLADINO. No, sir.

Mr. WATKINS. Any area like Panama or outer regions of the continental United States?

General PALLADINO. No, sir, we do not.

Mr. WATKINS. None whatsoever?

General PALLADINO. None whatsoever.

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PARTNERSHIP PROJECTS

Mr. WATKINS. I am glad to hear that. Do you have any areas that have been privatized, so to speak, in your area, that have been turned over, that have been operated by the Corps?

General PALLADINO. Historically, sir, there have been some projects with a partnership arrangement which have been conducted within our area in the past time.

Mr. WATKINS. Would you make that part of the record?

General PALLADINO. I would be happy to provide that.

[The information follows:]

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FEDERAL NON-FEDERAL PARTNERSHIP PROJECTS IN CALIFORNIA

PROJECT (Authorization)	STREAM	CONSTRUCTED BY	STORAGE (Acre-Feet) GROSS	STORAGE (Acre-Feet) FLOOD CONTROL	COSTS ($1,000,000) FEDERAL	COSTS ($1,000,000) NON-FEDERAL	COSTS ($1,000,000) TOTAL
Del Valle Reservoir (Flood Control Act of 1962)	Alameda Creek	State of California	77,000	38,000	5.1	20.2	25.3
Lake Camanche (Flood Control Act of 1960)	Mokelumne River	East Bay Municipal Utility District	431,500	200,000	10.3	24.8	35.1
Lake Oroville (Flood Control Act of 1958)	Feather River	State of California	3,538,000	750,000	70.4	356.6	427.0
New Bullards Bar Reservoir (Flood Control Act of 1965)	North Yuba River	Yuba County Water Agency	960,000	170,000	12.9	165.1	178.0
New Don Pedro Reservoir	Tuolumne River	Turlock and Modesto Irrigation Dist.-City and County of San Francisco	2,030,000	340,000	14.9	100.8	115.7
Cherry Valley 1/ Reservoir (Flood Control Act of 1944)	Cherry Creek		268,000	(80,000)	(9.2)	---	---
New Exchequer 2/ Reservoir (Flood Control Act of 1960)	Merced River	Merced Irrigation District	1,026,000	400,000	10.9	10.0	20.9

1/ After completion of New Don Pedro Reservoir flood control storage and costs for storage at Cherry Valley Reservoir were transferred to New Don Pedro Reservoir.

2/ Excludes non-Federal costs for Hydropower

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FOREIGN TRAVEL

Mr. WATKINS. Also, verify that there is no money spent for any kind of foreign travel and that no one is assigned from your Division.

General PALLADINO. Yes, sir. The South Pacific Division has no assigned missions outside our geographic boundaries. We will check our records for any trips to foreign countries our personnel may have made and report on that to the committee.

QUESTIONS FROM REPRESENTATIVE KOLBE

Mr. WATKINS. Thank you. I appreciate that. I am becoming quite alarmed. I want to find out exactly where all our money is going and how it is being used.

Mr. Chairman, thank you.

Mr. BEVILL. Thank you, Mr. Watkins.

Mr. MYERS. Thank you.

Mr. BEVILL. Thank you, General, for a fine presentation. I and others on the committee have questions for the record. Also, Representative Kolbe of Arizona has submitted questions for the record for you to answer.

[The information follows:]

Questions Submitted by Congressman Bevill

MARIN COUNTY SHORELINE

Mr. BEVILL. Describe the Marin County Shoreline, San Rafael Canal study in California which is one of the new study starts contained in the budget.

General PALLADINO. San Rafael Canal provides the outlet for San Rafael Creek into San Francisco Bay. The canal is bordered by San Rafael's central business district and dense residential areas. the current value of the 3,000 properties along the canal subject to flooding is $250 million. The combination of storm runoff and high tides causes overtopping of the canal and extensive flooding of the adjacent areas.

GILA RIVER AND TRIBUTARIES

Mr. BEVILL. Last year's House Report directed that the Santa Cruz interim report portion of the Gila River and Tributaries study be expedited. What have you done in response to this directive?

General PALLADINO. Sir, we have resumed the Santa Cruz interim study as directed. We will be reevaluating previously identified alternatives. The report will be completed in March 1987 at which time we will assess economic viability and determine any future needs.

LOS ANGELES COUNTY DRAINAGE AREA REVIEW

Mr. BEVILL. Explain the need to expand the Los Angeles County Drainage Review study due to identification of a greater flood threat than anticipated.

General PALLADINO. Our studies have now progressed sufficiently that we have identified specific areas of the Los Angeles County Drainage Area system that are not capable of fully controlling a 50-year, or larger, storm event. The original cost estimate and plan of study did not provide for the greater effort in alternative analysis, interior drainage impact analysis, or more extensive public involvement required to solve these problems.

SACRAMENTO-SAN JOAQUIN DELTA

Mr. BEVILL. I note you are requesting $250,000 for the Sacramento San Joaquin Delta, California, study. Why are no funds allocated to the study in Fiscal Year 1986?

General PALLADINO. Sir, when the Fiscal Year 1986 budget was formulated the future direction of studies had not been clearly defined. An interagency agreement

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on future studies has now been executed. There are sufficient funds available in Fiscal Year 1986 to continue coordination with the State of California and other Federal agencies in developing the comprehensive Delta plan.

Mr. BEVILL. Describe your plans to develop an integrated Federal-State comprehensive plan for the Delta.

General PALLADINO. Sir, A Letter of Understanding for the Sacramento-San Joaquin Delta Technical Studies Coordination was signed in January 1986 by the State of California Department of Water Resources, U.S. Bureau of Reclamation, and Corps of Engineers. An Interagency Delta Management Committee is being formed to make recommendations on the goals, products, and timing of all coordinated technical studies. Coordination of current technical studies involve computer and physical modeling, seismic, subsidence, emergency planning to maintain potable water supply, levee design, and levee maintenance alternatives. Upon completion of these and other studies the lead agency for the specific study will prepare a report that will be used to develop an interagency comprehensive plan for the Delta. The interagency plan will address water supply, flood control, recreation, and fish and wildlife enhancement.

LAS VEGAS WASH

Mr. BEVILL. Would you expand on the statement in the justifications relative to the Las Vegas Wash, Nevada, study which states that the increased cost of $740,000 is "due to a more realistic estimate of study requirements. . . ."?

General PALLADINO. Sir, the reconnaissance phase of the Las Vegas Wash study was completed in July 1985. The reconnaissance investigations found that the previous cost estimate was not adequate to complete the feasibility level investigations along Las Vegas Creek and Flamingo and Tropicana Washes. In addition, the increase in the cost estimate also includes the cost of a reassessment of the severity of flood problems along Las Vegas Wash, Las Vegas Range Wash and the Henderson area. The feasibility study is scheduled for completion in September 1989.

GUADALUPE RIVER AND ADJACENT STREAMS

Mr. BEVILL. Last year's House Report directed that $265,000 be made available for the San Jose, California, interim portion of the Guadalupe River study. How are the funds being used?

General PALLADINO. Sir, these funds have been temporarily withheld by the Chief of Engineers pending favorable action on the final feasibility report by the Board of Engineers for Rivers and Harbors. Once the Board has acted favorable on the report the funds will be allocated.

SANTA ANA RIVER

Mr. BEVILL. Outline the current status of the Santa Ana River, California, study?

General PALLADINO. Planning and engineering studies for project elements at Prado Dam and downstream are on schedule and will be completed in August 1988. The report on alternatives to Mentone Dam, recommending the Upper Santa Ana River Dam as an alternative is currently under review by the Board of Engineers for Rivers and Harbors.

NEW CONSTRUCTION STARTS

Mr. BEVILL. Three of the 19 new construction starts proposed in the Fiscal Year 1987 budget are in the South Pacific Division—Oakland Outer Harbor, California; Pajaro River, California; and Redbank and Fancher Creeks, California. Describe each project and indicate why these projects were chosen for initiation in Fiscal Year 1987.

OAKLAND OUTER HARBOR

General PALLADINO. Sir, the Oakland Outer Harbor project is a segment of Oakland Harbor located in the city of Oakland, California, on the eastern shore of San Francisco Bay. The project deepens the existing 3.4-mile Outer Harbor Channel from 35 to 42 feet, widens the entrance channel and provides an enlarged turning basin. The total estimated project cost is $28,120,000, average annual benefits are estimated at $8,120,000, and the resulting benefit-to-cost ratio is 3.0 to 1. The project met all selection criteria and, by letter dated October 3, 1985, the Port of Oakland reaffirmed its willingness to cost share in accordance with concepts agreed to by the Administration and the Senate Majority Leadership.

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PAJARO RIVER

The Pajaro River project is located in the city of Gilroy, in Santa Clara County, California. The plan of improvement includes the construction of 2.2 miles of levees along Uvas Creek, 1.8 miles of biking trails, and 1.6 miles of hiking trails. The total estimated project cost is $5,840,000, average annual benefits are estimated at $1,170,000, and the resulting benefit-to-cost ratio is 2.1 to 1. The project met all selection criteria tests and the Santa Clara Valley Water District, by letter dated October 24, 1985, expressed its willingness to cost share the project, in accordance with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership. However, the Water District noted that there should be further consideration of Federal reimbursement for one-half of the non-Federal costs in excess of Federal construction costs for flood control, in accordance with Section 3 of the Flood Control Act of 1936.

REDBANK AND FANCHER CREEKS

The Redbank and Fancher Creeks project is located in Fresno County, California, northeast of the Fresno-Clovis Metropolitan Area. The plan of improvement provides for construction of a 10,300 acre-foot flood control reservoir on Fancher Creek; flood control detention basins on Redbank Creek, Pup Creek, and Alluvial Drain; and enlargement of the Big Dry Creek flood control reservoir to 31,800 acre-feet. The total estimated project cost is $73,500,000, average annual benefits are estimated at $8,840,000, and the resulting benefit-to-cost ratio is 1.6 to 1. The project met all selection criteria tests and the Fresno Metropolitan Flood Control District, by letter dated October 9, 1985, expressed its willingness to cost share the project, in accordance with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership.

PAJARO RIVER

Mr. BEVILL. Explain the issue raised in connection with the Pajaro River project involving Federal reimbursement for non-Federal costs.

General PALLADINO. Sir, under the previous cost sharing policy, the Santa Clara Valley Water District would have been eligible to request Federal reimbursement for one-half of the non-Federal costs in excess of Federal construction costs for flood control, in accordance with Section 3 of the Flood Control Act of 1936. However, under the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, the local sponsor is not eligible to request Federal reimbursement.

RICHMOND HARBOR

Mr. BEVILL. Why are you reducing the scope of the Richmond Harbor, California, project as shown on page 60?

General PALLADINO. The Richmond Harbor and the San Francisco Bay to Stockton projects share a common channel through the Southhampton Shoal. When the feasibility report for Richmond Habor was prepared, the common channel of the authorized San Francisco Bay to Stockton project had not yet been constructed. The cost of the full channel was included in the Richmond Harbor project's economic analysis to demonstrate that the project was viable even if the San Francisco Bay to Stockton project did not proceed on schedule. Construction of the channel is now underway under the San Francisco Bay to Stockton project and the Richmond project cost has been reduced accordingly.

SACRAMENTO RIVER DEEP WATER SHIP CHANNEL

Mr. BEVILL. Explain the cost decrease of $9.3 million on the Sacramento River Deep Water Ship Channel, California, project; including $8.9 million for removal of the salinity control structure.

General PALLADINO. Sir, the $9.3 million net decrease includes increases of $3.1 million for higher price levels, $6.2 million for inflation through construction, and $50,000 for increased cost of fish and wildlife facilities based on recent, more accurate quantity estimates. These increases were offset by decreases of $8,900,000 for deletion of the project's salinity control structure because model testing showed the project would have no significant salinity impacts, $5,500,000 in remaining dredging costs based on recent surveys which better defined required dredge quantities, and $1,600,000 in engineering and design and $2,650,000 in supervision and administration requirements.

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PHOENIX, ARIZONA AND VICINITY

Mr. BEVILL. In connection with the Phoenix, Arizona project, what is the status of the cost-benefit analysis of the Reach 4 from Dreamy Draw to Cudia City Wash which was requested in the Fiscal Year 1986 House Report?

General PALLADINO. The cost-benefit analysis of Reach 4 is currently underway and is scheduled to be submitted to the Committee in September 1986.

CORTE MADERA CREEK

Mr. BEVILL. Explain the increased dredging cost of $1.5 million on the Corte Madera Creek, California, project due to "restricted access".

General PALLADINO. Sir, as a result of detailed surveys for the redredging final design, we found that access to the lower Corte Madera Creek channel was restricted by the clearance width under the Northwestern Pacific Railroad bridge. This restriction required use of a smaller less economical dredge and smaller barges which increased the number of hauls to the Alcatraz Island material disposal area. These factors increased the cost.

DRY CREEK (WARM SPRINGS) LAKE AND CHANNEL

Mr. BEVILL. General, $10.5 million has been allocated to fish and wildlife facilities at the Dry Creek, Warm Springs, Lake and Channel, California project. Why do you need to spend an additional $1.4 million for fish hatchery expansion as shown on page 98?

General PALLADINO. Sir, the project for Russian River, Dry Creek, California, was modified by Section 95 of the 1974 Water Resources Development Act, Public Law 93-251, to compensate for fish losses on the Russian River attributed to the operation of the Coyote Dam, Lake Mendocino, component of the project. Necessary mitigation was to be achieved by expansion of the capacity of the fish hatchery at the Dry Creek, Warm Springs, Lake and Channel component of the project. Our previous cost estimates for the Dry Creek, Warm Springs, project did not include an estimate to comply with this requirement.

MERCED COUNTY STREAMS

Mr. BEVILL. In regard to the Merced County Streams, California project, you show a potential allocation of $1.7 million in Fiscal Year 1986 with the notation "based on current project schedule". Have the funds been allocated?

General PALLADINO. Sir, of this amount, $160,000 has been allocated for preparation and negotiation of a Local Cooperation Agreement with the project sponsor. An additional $215,000 will be allocated to complete these negotiations. Allocation of the balance for construction is contingent upon execution of the Agreement by June 30, 1986.

SACRAMENTO RIVER BANK PROTECTION

Mr. BEVILL. What are the additional environmental requirements referred to in connection with the Sacramento River Bank Protection Project, California.

General PALLADINO. Sir, there are numerous environmental studies being conducted relative to this project by the U.S. Fish and Wildlife Service, California Department of Fish and Game, and Corps of Engineers. These studies are to assess the impacts of bank protection and determine mitigation measures if necessary. The studies concern spawning gravel sedimentation, juvenile salmon rearing habitat, salmon redd count, mitigation program evaluation, revegetation, and the bank swallow migratory bird habitat.

WALNUT CREEK

Mr. BEVILL. General, I note on page 160 that local interests have requested that recreation be added as a project purpose to the Walnut Creek, California project. Will this action require additional authorization?

General PALLADINO. No Sir. We are currently conducting engineering studies to identify the scope of the proposed recreation facilities requested by the Contra Costa County Flood Control and Water Conservation District and the city of Walnut Creek. Upon completion of our studies, we could add recreational development as a project purpose without any additional authorization.

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WILDCAT AND SAN PABLO CREEKS

Mr. BEVILL. Construction funds were appropriated on the Wildcat and San Pablo Creeks, California, project in Fiscal Year 1980. Explain the $1.5 million decrease in the Federal cost "for adjustment in Federal costs in accordance with the cost sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership".

General PALLADINO. Sir, the cost sharing arrangements agreed to by the Administration and the Senate Majority Leadership apply to all projects in which construction has not actually started. While construction funds were appropriated in Fiscal Year 1980, we never initiated actual construction on this project. The agreed upon cost sharing and financing concepts for local protection flood control projects require an upfront local cash contribution of five percent of the total estimated project cost amounting to $1.5 million. This cash contribution is in addition to the previously reported non-Federal cost for project lands, easements, rights-of-way and relocations. Consequently, the Federal cost was decreased by $1.5 million.

LITTLE DELL LAKE

Mr. BEVILL. Describe the new proposal by local interests affecting the Little Dell Lake, Utah project.

General PALLADINO. Sir, the County of Salt Lake and the Metropolitan Water District of Salt Lake City proposed a smaller project at the Little Dell Lake site which would be affordable to them. The reduced plan of improvement provides for construction of a 226-foot-high dam, about eight miles east of Salt Lake City. This will create a 21,000 acre-foot capacity lake for flood control, and municipal and industrial water supply. The total cost would be about $45.0 million and average annual benefits are estimated at $6.3 million. The resulting benefit-cost ratio is 4.3 to 1. We are currently evaluating this proposal to determine whether it is technically feasible and environmentally appropriate.

MARINA DEL REY

Mr. BEVILL. Our colleague on the Appropriations Committee, Representative Julian Dixon of California, is vitally interested in the shoaling problem at Marina del Rey, California. What action have you taken in response to the directive regarding this problem as addressed in the Conference Report on the Fiscal Year 1986 Energy and Water Development Appropriation Bill?

General PALLADINO. Sir, the dredging period at Marina del Rey is restricted to October through March to accommodate Grunion spawning and nesting of the endangered Least Tern species. In October 1985 we conducted a channel condition survey which revealed that project depths were inadequate for boats using the harbor. The project will be surveyed again in April or May 1986 to determine the extent of any shoaling and the need for maintenance dredging. If required, we would commence dredging in the first quarter of Fiscal Year 1987, the first available environmental window, utilizing funds included in the Fiscal Year 1987 budget.

SEPULVEDA DAM

Mr. BEVILL. P.L. 99-88, the Fiscal Year 1985 Supplemental Appropriations Act appropriated $2.6 million to construct recreation facilities at Sepulveda Dam, California. What is the status of this work?

General PALLADINO. Sir, we are currently in the design phase for the recreation lake facilities. This effort should be completed in September 1986 with bids for construction of the recreation lake scheduled to be opened in December 1986. The construction phase will require about one year and should be completed in January 1988.

OCEANSIDE EXPERIMENTAL SAND BYPASS SYSTEM

Mr. BEVILL. I note the Oceanside Experimental Sand Bypass System is scheduled for completion in Fiscal Year 1986. What can you report at this time as to the system's effectiveness?

General PALLADINO. Sir, the development phase of the experimental system is now being constructed so it is too early to tell. We anticipate that the jet pump in the entrance channel will become operational about May 1986 and that pumping from the north fillet will commence in October. Our initial assessment of the system's sand pumping capability will be made after operational testing and some production pumping are performed.

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Questions Submitted by Congressman Kolbe

GILA RIVER AND TRIBUTARIES

Question. It is my understanding that the Rillito River interim final report has been completed by the Los Angeles District. What is the current status of the final report?

Answer. The final report for the Rillito River interim study will be completed in June 1986. We anticipate recommending an economically justified bank protection project.

Question. I noticed that no funds are included in the Fiscal Year 1987 budget to begin detailed designs and plans and specifications for the Rillito River recommended plan. Would you explain why this is?

Answer. Since the interim feasibility report for Rillito River has not yet been completed, the project was not eligible for inclusion in the Fiscal Year 1987 budget for Continuation of Planning and Engineering.

Question. As you are no doubt aware, language was included in both House of Representatives and Senate Bills (HR 6 and S 557, respectively) authorizing a project for bank erosion control on the Rillito River. It would clearly be helpful to have a final report transmitted to Congress as soon as possible to expedite Congressional action on these two bills. What is the Corps doing to realize this goal?

Answer. We will complete the final report of this study in June 1986.

Question. Related to question 3 is the issue of crediting the local sponsor for any work they do that is, in the opinion of the Secretary of the Army, consistent with the Corps' recommended plan. Both of the Bills referenced in question 3 contain language that credits the local sponsor for any work/construction undertaken after January 1, 1985 that meets this criteria. I have been informed by Pima County that the Corps will be revising the recommended plan contained in the draft report to exclude construction recently begun by the County that is consistent with the Corps' recommended plan contained in the draft report. The County is very upset with this change and feels that they are being penalized for taking the initiative to protect people and property in these areas which are subject to high erosion damages. What is the Corps doing to resolve this issue?

Answer. The report on Rillito River will be consistent with principles and guidelines and will show the work being performed by Pima County as part of the preproject condition. This work will not be a part of the Corps' recommended plan. Should this project be authorized with provisions for crediting the local sponsor for work previously completed, we will make the necessary adjustments and changes.

CLOSING

Mr. BEVILL. Thank you very much. Keep up the good work.

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WEDNESDAY, FEBRUARY 26, 1986.

PACIFIC OCEAN DIVISION

WITNESSES

BRIGADIER GENERAL ROBERT H. RYAN, DIVISION ENGINEER
CLARENCE FUJII, DEPUTY CHIEF, ENGINEERING DIVISION
JOHN PELOWSKI, CHIEF, PLANNING BRANCH
MARIAN YAMASHIRO, CHIEF, PROGRAM SECTION

GENERAL

Mr. BEVILL. General Ryan, welcome. This is General Ryan's first appearance before this Committee.

Please insert your biography for the record.

[The information follows:]

BIOGRAPHY OF BRIG. GEN. ROBERT H. RYAN, COMMANDER AND DIVISION ENGINEER, PACIFIC OCEAN DIVISION, U.S. ARMY CORPS OF ENGINEERS

Brigadier General Robert H. Ryan became Commander and Division Engineer, U.S. Army Corps of Engineers, Pacific Ocean Division, Honolulu, Hawaii, in September 1985.

The Pacific Ocean Division is responsible for the Corps' water resources development activities in Hawaii, the Territory of Guam, American Samoa, and the Commonwealth of the Northern Marianas. The Division manages military construction activities for the Army and Air Force in Hawaii; the Army, Navy and Air Force in Japan and Korea; construction at the Kwajalein Missile Range; and capital improvement program for the Trust Territory of the Pacific Islands Government in the Marshall Islands.

Prior to this assignment, General Ryan was Deputy Director (Plans and Requirements), Defense Mapping Agency, Washington, D.C.

He graduated in 1959 from West Point with a bachelor's degree in military science, and later earned a master's degree in civil engineering from the University of Illinois. He is also a graduate of the Army Command and General Staff College and the Industrial College of the Armed Forces.

General Ryan has had numerous assignments in the United States and overseas. Most recently, he served as the Mobile District Engineer, and was executive director of military programs at HQ USACE. His assignments include duty in Vietnam with the 26th Engineer Battalion, 23d Infantry Division (Americal) and with HQ DA as staff officer with ODCS for Operations and Plans; followed by assignments to Korea in command of the 2d Engineer Battalion, 2d Infantry Division. He returned to Washington, D.C. to serve as Assistant Chief, Office of Staffing and Management and later as Assistant for Navigation at HQ USACE.

Among his awards and decorations are the Legion of Merit, the Bronze Star Medal (with OLC), the Meritorious Service Medal (with OLC), Army Commendation Medal (with 3 OLC), the Air Medal, and the Parachutist Badge.

General Ryan was born in Beatrice, Nebraska. He is a registered professional engineer (civil) in the State of Virginia. He and his wife, the former Sondra McIntosh, have two children, Stephen and Rebecca.

General RYAN. Mr. Chairman, it is a pleasure to appear here. This is my first opportunity to present our budget request for fiscal year 1987. Accompanying me are: Mr. Clarence Fujii, Deputy Chief of our Engineering Division; Mr. John Pelowski, Chief of the Plan-

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ning Branch; and Mrs. Marian Yamashiro, Chief of the Program Section.

AREA OF RESPONSIBILITY

The Pacific Ocean Division Civil Works area of responsibility includes the State of Hawaii, Territories of Guam and American Samoa, and the Commonwealth of the Northern Mariana Islands. In addition, we have responsibility for certain regulatory authorities and the planning assistance program in the Trust Territories of the Pacific Islands. These activities in the Trust Territories are subject to change, depending on the final resolution of Federal procedures under the Compact of Free Association.

The Pacific Ocean Division area is comprised of islands dispersed over a vast ocean environment. The total land area is about 7,500 square miles and includes a population of more than 1.2 million. Civil Works responsibilities in the Pacific region include challenges related to geographical distance, cultural differences, and lack of basic infrastructure development.

CONTINUING AUTHORITIES PROGRAM

The Corps' continuing authorities program provides a means to responsively meet, in a timely manner, critical water resources needs of the Pacific Basin communities utilizing significant returns for limited Federal dollars invested in each project. Under the continuing authorities program, we have constructed 34 projects and have 19 additional projects in planning and design stages.

I will highlight our fiscal year 1985 accomplishments and review the fiscal year 1986 activities.

FISCAL YEAR 1985 ACCOMPLISHMENTS

I am happy to report that the Barbers Point Deep Draft Harbor project was dedicated in August 1985. Senators Inouye and Matsunaga, Congressman Akaka, Governor Ariyoshi and General Hatch attended the dedication ceremony. This project will provide the much needed additional commercial navigation capacity to support the growing economy of Hawaii. The State of Hawaii plans to invest about $80 million in shoreside and support developments, beginning with a contract award in 1987 for construction of dock facilities and four terminals. This project is expected to generate significant regional and national benefits, creating opportunities for economic growth similar to those resulting from the Corps' initial improvements to Honolulu Harbor in 1905.

The Pacific Ocean Division, as the design and construction agent on a Congressionally authorized project for the State of Pohnpei, recently awarded a contract for the Nanpil River Hydropower project in Pohnpei utilizing U.S. funds appropriated directly to the Corps. The construction contract value is slightly more than $5.5 million and the project is scheduled for completion in late 1987. The project includes an operation and training period for local technicians that will continue for one year after construction completion. This project will provide 4 million kilowatt-hours of energy annually and will meet 20 percent of the island's energy needs.

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Pacific Ocean Division's efforts under the Northern Mariana Islands Comprehensive study identified a variety of needs. Flood control and small craft navigation needs identified by the study will be addressed under the Corps' continuing authorities program. In response to the water supply needs and because of the urgency of the project, the Government of the Northern Marianas has initiated a program for improvement of the Saipan municipal water system using guidance on potential groundwater yields developed in the comprehensive study. The primary remaining need identified in the reconnaissance phase was that of commercial navigation improvements at Saipan Harbor to support current and projected waterborne commerce. During the feasibility study phase, we will examine features such as entrance channel, turning basin, and breakwater requirements.

By limiting the feasibility study to the commercial navigation requirement, we have reduced the study cost to $660,000. We fully expect Governor Tenorio to execute the study costsharing agreement next month.

At the request of the Commonwealth Government, we initiated on a reimbursable basis, the design for rehabilitation of an existing dock and also design for a new dock at the Saipan commercial port.

I am pleased to report that the Fiscal Year 1985 Supplemental Appropriations Act will provide funds to initiate construction of the Kahoma Stream flood control project on the island of Maui. Plans and specifications for this $24 million project have been completed and are in the final stages of coordination. The local cooperation agreement is expected to be executed in May 1986 to allow a construction contract award.

We have completed a General Design Memorandum for the Agana River flood control project in Guam. Redesign of this project has resulted in identification of a plan for 100-year level flood protection for the urban area which has a total value of $125 million for lands and improvements. The estimated project cost is $5.1 million. We have received strong local support from Governor Bordallo.

FISCAL YEAR 1986 ACTIVITIES

Turning to fiscal year 1986, we completed one construction project and one dredging project. We will initiate construction on three projects, and we are continuing three survey studies as well as continuing work on the operation and maintenance program.

Construction was completed in December 1985 on the Asquiroga Bay shore protection in Guam, under the continuing authorities program. Maintenance dredging at Manele Harbor on the island of Lanai was awarded in September and completed in December 1985.

The Nawiliwili Harbor breakwater rehabilitation project on the island of Kauai will be advertised for construction bids next month. The construction contract award is scheduled for the third quarter of fiscal year 1986.

A construction contract award is scheduled for the Laupahoehoe navigation improvement project on the island of Hawaii, under the continuing authorities program.

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As mentioned earlier, a construction contract award for the Kahoma Stream flood control project is scheduled in the fourth quarter of fiscal year 1986.

Our ongoing survey program for fiscal year 1986 consists of three studies: the Guam and the Northern Mariana Islands comprehensive studies, and the Review of Coasts of Hawaiian Islands. Feasibility studies for the Northern Mariana Comprehensive study will be initiated upon execution of a cost-sharing contract with the local sponsor in the second quarter. We have just been informed by the State of Hawaii that they will not participate in the feasibility phase of South Kohala Water Supply study.

Under our operation and maintenance program, in addition to maintenance dredging and regulatory features, project condition surveys will be accomplished at four harbors.

FISCAL YEAR 1987 ALLOCATION REQUEST

The Pacific Ocean Division budget request for fiscal year 1987 is $10,431,000.

GENERAL INVESTIGATIONS

The $667,000 included in the President's budget for General Investigations was based on funding five survey investigations. However, since the State of Hawaii recently decided not to participate in the South Kohala Water Supply study, the $117,000 requested for that study will not be required. With the fiscal year 1987 funds requested, we will complete one comprehensive study, one interim report, one feasibility phase study and one reconnaissance phase study.

HARBORS AND RIVERS IN THE TERRITORY OF GUAM

Our $270,000 request for Harbors and Rivers in the Territory of Guam will be used to complete a comprehensive study of Guam's water resource needs initiated in 1979. The major work in fiscal year 1987 will be to identify and define a potential Federal interest in protection of Agana from storm-generated flood damages.

HARBORS AND RIVERS IN HAWAII

The request of $100,000 for Harbors and Rivers in Hawaii will be used to complete an interim report for light-draft navigation needs for the State of Hawaii. Major work in fiscal year 1987 will be to complete detailed studies for improvements to three harbors.

NORTHERN MARIANA ISLANDS

The $50,000 requested as the fiscal year 1987 Federal share will be used to complete the navigation feasibility phase of the Northern Mariana Islands comprehensive study. The report will address the feasibility of Federal navigation improvements in Saipan and will complete the comprehensive study.

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KEOPU-HIENALOLI STREAM

HARBORS AND RIVERS IN HAWAII

The $130,000 requested for Keopu-Hienaloli Stream on the island of Hawaii will be used to initiate and complete the reconnaissance phase of a flood damage prevention study. This study was requested by the County of Hawaii to define flooding problems and to identify possible solutions to reduce flood damages in the floodplain of approximately 210 acres with an estimated value of $70 million for improvements and contents.

CONSTRUCTION

Our construction budget request is $7.2 million for initiation of construction on the Agana River flood control project and continuing construction on the Kahoma Stream flood control project.

AGANA RIVER

Our request of $700,000 will be utilized to initiate construction in partnership with the Government of Guam on this urgently needed flood control project for the capital city of Agana. This project, consisting of 2,550 feet of levee and floodwall and 1,700 feet of channel improvement, will prevent flood damages averaging approximately $700,000 annually. It should be noted that project authorization for construction will be required.

KAHOMA STREAM

The requested $6.5 million will be used to continue construction of the Kahoma Stream flood control project. The project is scheduled to be completed in fiscal year 1988. This channel improvement project will provide urban flood protection for the Lahaina community.

OPERATION AND MAINTENANCE

Our budget request for operation and maintenance is $2,564,000 and includes $684,000 for general regulatory functions, $1,725,000 to complete the rehabilitation of the Nawiliwili Harbor breakwater, $85,000 for project condition surveys, $9,000 for inspection of completed works, and $61,000 for operation of the Regional Visitor Center at Fort DeRussy.

SUMMARY

In summary, our fiscal year 1987 budget request of $10,431,000 will provide for continuation of Corps of Engineers water resources planning, development, and operation and maintenance of civil works projects in the Pacific Basin. Mr. Chairman, this completes my presentation. I will be pleased to respond to any questions that you or other committee members may have.

Mr. BEVILL. That is very good. Thank you. We will insert your statement and the justification material for the Pacific Ocean Division in the record of this point, without objection.

[The statement of General Robert H. Ryan and the justifications follow:]

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SUMMARY STATUS REPORT

STATUS REPORT OF BRIGADIER GENERAL ROBERT H. RYAN
DIVISION ENGINEER, PACIFIC OCEAN
BEFORE THE SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT
COMMITTEE ON APPROPRIATIONS
FISCAL YEAR 1987

GENERAL

Mr. Chairman and Members of the Committee:

I am Brigadier General Robert H. Ryan, I assumed command of the Pacific Ocean Division in September 1985. This is my first opportunity to appear before you to report on the Civil Works program in the Pacific basin and to present our budget request for fiscal year 1987. Accompanying me are Mr. Clarence Fujii, Deputy Chief of our Engineering Division, Mr. John Pelowski, Chief of the Planning Branch, and Mrs. Marian Yamashiro, Chief of the Program Section.

AREA OF RESPONSIBILITY

The Pacific Ocean Division Civil Works area of responsibility includes the State of Hawaii, Territories of Guam and American Samoa, and the Commonwealth of the Northern Mariana Islands. In addition, we have responsibility for certain regulatory authorities and the planning assistance program in the Trust Territories of the Pacific Islands. These activities in the Trust Territories are subject to change depending on the final resolution of Federal procedures under the Compact of Free Association.

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FISCAL YEAR 1986 ACTIVITIES

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The request of $100,000 for Harbors and Rivers in Hawaii will be used to complete an interim report for light-draft navigation for the State of Hawaii. Major work in fiscal year 1987 will be to complete detailed studies for improvements to three harbors.

NORTHERN MARIANA ISLANDS

The $50,000 requested as the fiscal year 1987 Federal share will be used to complete the navigation feasibility phase of the Northern Mariana Islands comprehensive study. The report will complete the comprehensive study and will address the feasibility of Federal navigation improvements in Saipan.

KEOPU-HIENALOLI STREAM
HARBORS AND RIVERS IN HAWAII

The $130,000 requested for Keopu-Hienaloli Stream on the island of Hawaii will be used to initiate and complete the reconnaissance phase of a flood damage prevention study. This study was requested by the County of Hawaii to define flooding problems and to identify possible solutions to reduce flood damages in the floodplain of approximately 210 acres of lands with improvements and contents of estimated value of $70 million.

CONSTRUCTION

Our construction budget request is $7,200,000 for initiation of construction on the Agana River flood control project and continuing construction on the Kahoma Stream flood control project.

AGANA RIVER

Request of $700,000 will be utilized to initiate construction in partnership with the Government of Guam on this urgently needed flood control project for the capital city of Agana. This project consisting of 2,550 feet of levee and floodwall and 1,700 feet of channel improvement will prevent flood damages averaging approximately $700,000 annually. It should be noted that project authorization for construction will be required.

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KAHOMA STREAM

The requested $6,500,000 will be used to continue construction of the Kahoma Stream flood control project. The project is scheduled to be completed in fiscal year 1988. This channel improvement project will provide urban flood protection for the Lahaina community.

OPERATION AND MAINTENANCE

Our budget request for operation and maintenance is $2,564,000 and includes $684,000 for general regulatory functions, $1,725,000 to complete the rehabilitation of the Naviliwili Harbor breakwater, $85,000 for project condition surveys, $9,000 for inspection of completed works, and $61,000 for operation of the Regional Visitor Center at Fort DeRussy.

SUMMARY

In summary, our fiscal year 1987 budget request of $10,431,000 will provide for continuation of Corps of Engineers water resources planning, development, and operation and maintenance of Civil Works projects in the Pacific basin. Mr. Chairman, this completes my presentation. I will be pleased to answer any questions that you or other committee members may have.

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Justification of Estimates for Civil Functions Activities
Department of the Army, Corps of Engineers
Fiscal Year 1987
SUMMARY PACIFIC OCEAN DIVISION

	FY 1986 Allocations $	FY 1987 Request $	Increase or Decrease $
General Investigations			
Surveys including Phase I Stage of AE&D	399,000	667,000	+268,000
Continuation of Planning and Engineering	0	0	0
Advance Engineering and Design	0	0	0
Construction, General			
Continuation of Engineering and Design	0	0	0
Construction	3,974,000	7,200,000	+3,226,000
Major Rehabilitation (Continuing) and Dam Safety Assurance	0	0	0
Operation and Maintenance, General			
Project Operations and Maintenance	3,062,000	2,564,000	-498,000
Major Rehabilitation (Continuing)	0	0	0
TOTAL	$7,435,000 1/	$10,431,000	+$2,996,000

1/ Does not reflect reduction required by the Balanced Budget and Emergency Deficit Control Act of 1985 (Public Law 99-177).

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APPROPRIATION TITLE: General Investigations, Fiscal Year 1987 — Pacific Ocean Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
1. SURVEYS - NEW					
a. Navigation Studies: None					
b. Flood Damage Prevention Studies: The amount of $130,000 is requested in Fiscal Year 1987 to initiate and complete one flood damage prevention reconnaissance study.					
HAWAII					
Harbors and Rivers in Hawaii Keopu-Hienaloli Stream	130,000	0	0	130,000	0

The Keopu-Hienaloli drainage area is located in the North Kona District in the western part of the island of Hawaii. The waterways originate in the slopes of Mauna Loa and Hualali mountains. The floodplain is composed of urban, agricultural and forest land area. Most of the lower areas consist of single and multiple urban residential and commercial land. The 1980 population census for North Kona District was 13,748 with projection of 21,386 by year 2000. Agricultural land consists mostly of pasture with a macadamia nuts orchard and a coffee field in this area.

Flood problems due to the steep topography occur in most underdeveloped and shallow reaches. The mean annual rainfall ranges from about 20 inches along the coast to 100 inches at elevation 3,000 feet. The last major storm in February 1982 caused damages of more than $1.0 million to roads, utilities, residential properties, and commercial buildings. In addition to nonstructural measures, structural measures such as diversion and channel improvements, culvert modifications, and debris barriers will be considered for flood damage prevention.

The funds requested in Fiscal Year 1987 will be used to initiate and complete the reconnaissance phase at full Federal expense. The local sponsor, County of Hawaii has indicated intent to share equally in the feasibility phase cost that may follow the reconnaissance study. The reconnaissance phase is scheduled to be completed in January 1988.

c. Shoreline Protection Studies: None

d. Special Studies: None

e. Comprehensive Studies: None

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APPROPRIATION TITLE: General Investigations, Fiscal Year 1987 — Pacific Ocean Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
f. Project Review Studies: None					
TOTAL SURVEYS - NEW	130,000	0	0	130,000	0
2. SURVEYS - CONTINUING:					
a. Navigation Studies: An amount of $320,000 is requested in Fiscal Year 1987 for completion of two studies.					
TERRITORY OF GUAM					
Harbors and Rivers in the Territory of Guam	3,538,000	3,072,000	196,000	270,000	0

The island of Guam, 30 miles long and 4 to 9 miles wide, is located about 3,810 miles west of Honolulu and 1,550 miles south of Tokyo. The need for and feasibility of improvements in the interests of navigation, flood control, and related purposes including hydroelectric power, water supply, and shoreline protection are being investigated. An interim report for flood control on Agana River was completed in September 1975. The Ugum River Interim Study has been deferred indefinitely due to the northern ground water lens study conducted by the Government of Guam. The study indicated potential ground water yield is greater than earlier estimates. Study data have been provided to BUREC and SCS for use in their studies of agricultural water requirements and potential for development. The Apra Harbor Interim report completed in May 1983 has been recalled due to findings in August 1983 that the project at Apra Harbor is not economically justified.

Fiscal Year 1986 funds are being utilized to complete the draft final interim report and the EIS for the Comprehensive study. The funds requested for Fiscal Year 1987 will be used to complete the study. The study cost estimate has increased by $60,000 due to the requirement for a typhoon stage-frequency analysis for Agana Bay. The study report of the Division Commander is scheduled for completion in August 1987.

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Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS					
Northern Mariana Islands (Comprehensive) Study	510,000	355,000	105,000	50,000	0

The Commonwealth of the Northern Mariana Islands (CNMI) is located in the Western Pacific, approximately 3,800 miles west of Hawaii, and is composed of 14 islands with a total land area of 184 square miles. The populated islands are Saipan, Tinian, and Rota. The population census of 1980 was 16,780 for Northern Marianas with projection of 26,400 by year 2000. The reconnaissance phase study covered the need for and the feasibility of harbor improvements in the interests of navigation, flood control, water supply and wastewater management and related purposes including shoreline protection. The feasibility phase will determine the feasibility of deep draft harbor improvements only.

Fiscal Year 1985 funds were used to fully fund the reconnaissance phase at full Federal expense. The feasibility phase is being initiated in FY 1986 upon agreement by the local sponsor to share 50 percent of the costs of the feasibility phase. The funds requested for Fiscal Year 1987 will complete funding the Federal share of the feasibility phase. The estimated cost of the feasibility phase is $300,000. The study cost estimate has decreased by $1,375,000 from $2,035,000 to $660,000 based on a review of the reconnaissance phase documentation due to deletion of study efforts on water supply ($560,000), flood protection ($425,000), water quality and wastewater management ($100,000), shore protection ($80,000), and other (economic and human resources development $115,000) and reduction in the navigation study scope ($100,000). The deep draft navigation investigation will be continued in the feasibility phase. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$660,000
Reconnaissance Phase (Federal)	360,000
Feasibility Phase (Federal)	150,000
Feasibility Phase (Non-Federal)	150,000

The reconnaissance phase is scheduled to be completed in March 1986. The feasibility study is scheduled for completion in September 1987.

TOTAL NAVIGATION STUDIES	4,048,000	3,427,000	301,000	320,000	0

APPROPRIATION TITLE: General Investigations, Fiscal Year 1987 — Pacific Ocean Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987

b. Flood Damage Prevention Studies: An amount of $217,000 is requested in Fiscal Year 1987 for completion of two studies.

HAWAII

Harbors and Rivers in Hawaii South Kohala Water Supply	350,000	150,000	83,000	117,000	0

The study area is located along the northwest coast of the island of Hawaii and includes the South Kohala District, County of Hawaii. The purpose of the study is to determine the feasibility of water supply development. This area has had a history of periodic droughts during the past 20 years. The most recent occurred in 1981 for a period of about 6 months which required emergency actions by the local government. The economy of the district is based on tourism and agriculture.

Fiscal Year 1985 funds were used to fund the reconnaissance phase at full Federal expense. The feasibility phase is being initiated in FY 1986 upon agreement by the local sponsor to share 50 percent of the costs of the feasibility phase. The funds requested for Fiscal Year 1987 will complete funding the Federal share of the feasibility phase. The estimated cost of the feasibility phase is $380,000. A summary of study cost sharing is as follows:

Total Estimated Study Cost	$540,000
Reconnaissance Phase (Federal)	160,000
Feasibility Phase (Federal)	190,000
Feasibility Phase (Non-Federal)	190,000

The reconnaissance phase is scheduled to be completed in March 1986. The feasibility study is scheduled for completion in September 1987.

Harbors and Rivers in Hawaii	3,429,000	3,231,000	98,000	100,000	0

The study area includes the six major islands of the State of Hawaii. Existing water and related land resources developments in the Hawaii Region include crop irrigation systems, municipal and industrial water systems, pollution control, flood control and drainage projects, land treatment practices, both public utility and private power systems, and mineral production. The water related needs and problems include potential deterioration and/or depletion of ground water reserves, identification of developable surface water sources, pollution of streams and coastal waters, flood

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APPROPRIATION TITLE: General Investigations, Fiscal Year 1987

Pacific Ocean Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987

problems associated with urban development, lack of adequate small craft and deep water navigation facilities and power generation. The study will determine the advisability of improvements in the interests of navigation, flood control, beach erosion, water supply, power generation and other related water and land resources. The study report of the Division Commander is scheduled for completion in August 1987.

Review of Coasts of Hawaiian Islands: Preliminary studies for this interim study for light-draft navigation was initiated in Fiscal Year 1982. Fiscal Year 1986 funds are being used to continue the interim study on four identified projects for re-evaluation and revise the statewide model projecting demand for boating facilities through year 2035 based on the contingent valuation for evaluation. Funds requested for Fiscal Year 1987 will be used to complete the detailed studies and complete the interim report. The study cost estimate has increased by $100,000 due to expansion of study scope to prepare a full-scale feasibility study in lieu of the previously planned framework study. The interim report for Review of Coasts of Hawaiian Islands is scheduled for completion in August 1987.

TOTAL FLOOD DAMAGE PREVENTION STUDIES	3,779,000	3,381,000	181,000	217,000	0

c. Shoreline Protection Studies: None.

d. Special Studies: None.

e. Comprehensive Studies: None.

f. Project Review Studies: None.

TOTAL SURVEYS - CONTINUING	7,827,000	6,808,000	482,000	537,000	0

3. SURVEYS - CONTINUATION OF PLANNING AND ENGINEERING STUDIES

a. Navigation Studies: None.

b. Flood Damage Prevention Studies: None.

c. Shoreline Protection Studies: None.

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APPROPRIATION TITLE: General Investigations, Fiscal Year 1987

Pacific Ocean Division

Study	Total Estimated Federal Cost	Allocation Prior to FY 1986	Allocation FY 1986	Tentative Allocation FY 1987	Additional to Complete After FY 1987
d. Special Studies: None.					
e. Comprehensive Studies: None.					
4. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - NEW: None.					
5. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - CONTINUING: None.					
6. PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN - CONTINUATION OF PLANNING AND ENGINEERING STUDIES: None.					
GRAND TOTAL - SURVEYS AND PHASE I STAGE OF ADVANCE ENGINEERING AND DESIGN	7,957,000	6,808,000	482,000	667,000	0

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APPROPRIATION TITLE: Construction, General - Local Protection Projects (Flood Control)

PROJECT: Agana River, Guam (New)

LOCATION: The Agana River basin is located on the western end of the Territory of Guam near the center of the island. The Territory of Guam is located approximately 3,810 statute miles west of Honolulu. The drainage area controlled by proposed improvements is 10.4 square miles.

AUTHORIZATION: Not yet authorized; implementation is contingent upon Congressional authorization of construction.

BENEFIT-COST RATIO: The benefit-cost ratio is 1.4 to 1 at 8-5/8 percent, the current interest rate. The benefit-cost ratio is based on the project functioning independently.

SUMMARIZED FINANCIAL DATA			Accum % of Est Fed Cost
Estimated Federal Cost		$ 3,860,000	
Estimated Non-Federal Cost		1,290,000	
Cash Contribution	$ 280,000		
Other	1,010,000		
Total Estimated Project Cost		$ 5,150,000	
Allocations to 30 September 1985		$ 0	
Conference Allowance for FY 1986		0	
Allocation for FY 1986		0	
Allocations to Date		0	0
Allocation Requested for FY 1987		700,000	18
Scheduled Balance to Complete after FY 1987		3,160,000	
Unscheduled Balance to Complete after FY 1987		0	

STATUS: (1 Jan 1986)	PERCENT COMPLETE	COMPLETION SCHEDULE
Entire Project	Not started	Apr 1989
Channel	Not started	Apr 1989
Levee	Not started	Apr 1989

PHYSICAL DATA

Channel:
Type - Trapezoidal concrete
Length - 410 feet
Design Capacity - Standard Project Flood

Levee:
Length - 2,550 feet

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Division: Pacific Ocean

Region: Guam
Agana River, Guam

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JUSTIFICATION: Flood damages in the Agana River drainage basin result from inadequate capacity of the channel, flat topography, and floodplain development. The greatest flood on record occurred on 21 May 1976 with estimated damages of $4,000,000. Presently there are 440 structures in the Agana River floodplain. The average annual flood damage reduction is $672,000 with the project, all attributable to existing urban property. The project would provide a 100-year flood protection. The area to be protected comprises about 215 acres with a total estimated value of approximately $125,000,000 for land and improvements.

FISCAL YEAR 1987: The requested amount of $700,000 will be applied as follows:

Initiate Channel Construction	$450,000
Engineering and Design	200,000
Supervision and Administration	50,000
TOTAL	$700,000

NON-FEDERAL COSTS: Consistent with the cost-sharing and financing concepts agreed to by the administration and the Senate majority leadership, local interests will be required to provide lands, easements and rights-of-way, presently estimated at $266,000; modify or relocate utilities, roads, and bridges, where necessary in the construction of the project, presently estimated at $744,000; pay 5.4 percent of the cost allocated to flood control, presently estimated at $280,000, and bear all costs of operation, maintenance and replacement of flood control facilities, presently estimated at $21,000 annually. Local interests have also agreed to make all required cash payments and voluntary contributions concurrently with project construction.

STATUS OF LOCAL COOPERATION: The Government of Guam, in a letter of assurance dated 20 September 1985, reaffirmed the Territory's desire to meet the local cooperation requirements. A written agreement satisfying all the requirements of Section 221, PL 91-611, will be obtained from the non-Federal sponsor prior to initiation of construction.

COMPARISON OF FEDERAL COST ESTIMATE: The current Federal (Corps of Engineers) cost estimate of $3,860,000 is the first estimate submitted to Congress. The estimate includes $200,000 for an estimated inflation allowance from 1 October 1985 through the construction period.

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STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

a. The final EIS was filed with EPA in November 1978 and the Supplemental Environmental Impact Statement is scheduled for filing with EPA in February 1986. A significant change in environmental conditions is the relocation of the levee almost entirely out of the swamp area. This change significantly lessens the impact of the project on the swamp as compared to the plan presented in the final EIS of November 1978.

b. The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation, a public workshop was held on 4 June 1985, and the District Engineer's signature on the General Design Memorandum on 25 July 1985.

OTHER INFORMATION: Funds to initiate the Continuation of Planning and Engineering were appropriated in Fiscal Year 1984.

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Agana, River, Guam

HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Pacific Ocean

Project: Agana River, Guam (New)

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Change (4)	Current (5)
Federal Cost (Price Level)	$3,860 1/ (Oct 85)		NA		$3,860 1/

Reason for Change
a. Price Escalation
b. Design Changes
c. Additional Function Added Under General Authorization
d. Authorized Modification
e. Post-Contract Award and Other Estimating Adjustments
f. Schedule Changes
g. Sundry
h. Real Estate

1/ Includes $200 for allowance for estimated inflation from 1 Oct 1985 through the construction period.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL

CLASSIFICATION: Local Protection Project - Flood Control

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM (a)	PROJECT COST ESTIMATE (b)	TOTAL TO 30 SEP 1985 (c)	CURRENT FY 19 86 (d)	BUDGET FY 19 87 (e)	BALANCE TO COMPLETE AFTER FY 19 87 (f)
1	Channel	2,850,000	0	0	370,000	2,480,000
2	Levees	750,000	0	0	100,000	650,000
3	Engineering and Design	250,000	0	0	200,000	50,000
4	Supervision and Administration	290,000	0	0	30,000	260,000
5						
6	Total Applied Cost (Fed Funds and					
7	Non-Fed Contributions)	4,140,000	0	0	700,000	3,440,000
8	Undistributed Cost (None)					
9	Total Project Cost (Fed Funds and					
10	Non-Fed Contributions)	4,140,000	0	0	700,000	3,440,000
11	Pending Adjustments (None)					
12	Total Cost (Fed and Non-Fed Funds)	4,140,000	0	0	700,000	3,440,000
13	Undelivered Orders (None)					
14	Total Obligations (Fed and Non-Fed Funds)		0	0	700,000	3,440,000
15						
16	Federal Funds					
17	Total Applied Cost	3,860,000	0	0	700,000	3,160,000
18	Undistributed Cost (None)					
19	Total Project Cost	3,860,000	0	0	700,000	3,160,000
20	Pending Adjustments (None)					
21	Total Cost	3,860,000	0	0	700,000	3,160,000
22	Undelivered Orders (None)					
23	Total Obligations		0	0	700,000	3,160,000
24						
25	Non-Federal Contributions					
26	Total Applied Cost	280,000	0	0	0	280,000
27	Undistributed Cost (None)					
28	Total Project Cost	280,000	0	0	0	280,000
29	Pending Adjustments (None)					
30	Total Cost	280,000	0	0	0	280,000
31	Undelivered Orders (None)					
32	Total Obligations		0	0	0	280,000
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 Jan 1986	Pacific Ocean	Territory of Guam	Agana River
	DISTRICT	BASIN	

ENG FORM 6 SEP 74 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: Local Protection Project - Flood Control

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 1987	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Method of Financing					
2	Federal Funds	3,860,000				
3	Allocations		0	0	700,000	
4	Unobligated Carryover from Prior Year		0	0	0	
5	Total Funds Available for Obligation		0	0	700,000	
6	Appropriations Required			0	700,000	3,160,000
7						
8	Non-Federal Costs					
9	Cash Contributions	280,000	0	0	0	280,000
10	Other Costs					
11	Lands and Damages	260,000	0	0	260,000	0
12	Relocations	660,000	0	0	380,000	280,000
13	Other	90,000	0	0	90,000	0
14	Total Non-Federal Costs	1,290,000	0	0	730,000	560,000
15						
16	Total Project Cost					
17	Federal (Corps) Costs and Non-Federal					
18	Costs	5,150,000	0	0	1,430,000	3,720,000
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION / DISTRICT	REGION / BASIN	PROJECT
1 Jan 1986	Pacific Ocean	Territory of Guam	Agana River

ENG FORM 1 SEP 74 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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APPROPRIATION TITLE: Construction, General - Local Protection Projects (Flood Control)

PROJECT: Kahoma Stream, Maui, Hawaii (Continuing)

LOCATION: Kahoma Stream drainage basin is located in Lahaina on the west coast of the island of Maui, Hawaii.

AUTHORIZATION: Section 201 of the Flood Control Act of 1965 as amended by Section 131 of the Water Resources Development Act of 1976.

BENEFIT-COST-RATIO: The benefit-cost is 1.6 to 1 at 8-1/8 percent. The benefit-cost ratio is based on the project functioning independently. The benefit cost ratio for the fiscal year for which Congress appropriated initial construction funds (FY 1985) was 1.5 to 1.

SUMMARIZED FINANCIAL DATA		
Estimated Federal Cost		$16,800,000
Estimated Non-Federal Cost		7,300,000
Cash Contribution	$1,200,000	
Other	6,100,000	
Total Estimated Project Cost		$24,100,000
Allocations to 30 September 1985		$ 769,000
Conference Allowance for FY 1986		0
Potential Allocation for FY 1986		200,000
Potential Allocations through FY 1986		969,000
Allocation Requested for FY 1987		6,500,000
Schedule Balance to Complete after FY 1987		9,331,000
Unscheduled Balance to Complete after FY 1987		0

Accum % of Est Fed Cost	STATUS: (1 Jan 1986)	PERCENT COMPLETE	COMPLETION Schedule
	Entire Project	Not started	Feb 1989
	Channel	Not started	Feb 1989

PHYSICAL DATA

Accum % of Est Fed Cost	
	Channel:
	Type - Trapezoidal concrete
	Length - 5,415 feet
6	Design Capacity - Standard Project Flood
44	
	Debris Basin:
	Width - 120 feet
	Capacity - 55,000 cubic yards
	Revetted Outlet:
	Extend 70 feet seaward of stream mouth
	Bridges:
	Three concrete bridges - clear span of 60 feet

Division: Pacific Ocean

Region: Hawaii
Kahoma Stream, Maui, Hawaii

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JUSTIFICATION: Flood damages in the Kahoma Stream drainage basin result from inadequate capacity of the channel and bridge openings, restrictive bends in the stream, and high velocity flows. The greatest flood on record occurred on 13 May 1960 with an estimated peak flow of 7,750 cfs and with damages of $320,000 at the time. Presently there are 360 homes, 18 condominiums, 280 commercial establishments, two shopping centers, several small businesses and a sugar processing plant in the Kahoma Stream flood plain. The area to be protected comprises about 291 acres with a total estimated value of approximately $300,000,000 for land and improvements. The average annual benefits are $3,160,000, all flood control, based on 1 October 1985 price levels.

FISCAL YEAR 1987: The requested amount of $6,500,000 will be applied as follows:

Continue Channel Construction	$6,090,000
Engineering and Design	30,000
Supervision and Administration	380,000
Total	$6,500,000

NON-FEDERAL COSTS: Consistent with the cost-sharing and financing concepts agreed to by the Administration and the Senate Majority Leadership, local interests will be required to provide lands, easements, and rights-of-way, presently estimated at $2,200,000; modify or relocate utilities, roads, and bridges, where necessary in the construction of the project, presently estimated at $3,900,000; pay 5 percent of the cost allocated to flood control, presently estimated at $1,200,000, and bear all costs of operation, maintenance and replacement of flood control facilities, presently estimated at $28,000 annually. Local interests have also agreed to make all required cash payments and voluntary contributions concurrently with project construction.

STATUS OF LOCAL COOPERATION: The County of Maui, in a letter dated 2 April 1985 and in a recent meeting on 22 January 1986 reaffirmed the County's desire to meet the local cooperation requirements. In accordance with the Fiscal Year 1985 Supplemental Appropriations Act (Public Law 99-88), a written agreement satisfying all the requirements of Section 221, PL 91-611, will be obtained from the non-Federal sponsor and executed prior to June 30, 1986.

COMPARISON OF FEDERAL COSTS ESTIMATE: The current Federal cost estimate of $16,800,000 is an increase of $1,400,000 from the latest estimate of $15,400,000 submitted to Congress. This change includes increases of 100,000 based on higher price levels to 1 October 1985 and $1,300,000 for an estimated inflation allowance from 1 October 1985 through the construction period.

Kahoma Stream, Maui, Hawaii

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STATUS OF ENVIRONMENTAL IMPACT STATEMENT AND COMPLIANCE WITH CLEAN WATER ACT:

a. The final EIS was filed with CEQ in April 1975 and the supplemental information report to the FEIS was filed with EPA on 4 March 1983. No significant changes in environmental conditions or information have occurred since the FEIS was filed.

b. The provisions of Section 404 of the Clean Water Act have been met by a Section 404(b)(1) Evaluation, a Public Notice issued on 19 April 1979, a Certification issued by the State of Hawaii on 5 June 1981, and the District Engineer's signature on the General Design Memorandum on 29 June 1981.

OTHER INFORMATION: Funds to initiate preconstruction planning were appropriated in Fiscal Year 1979. This project was included among those to be started under the Fiscal Year 1983 budget amendment of 25 May 1982. This project is included as a new construction start in the Fiscal Year 1985 Supplemental Appropriations Act, Public Law 99-88.

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Kahoma, Steam, Maui, Hawaii

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HISTORICAL CHANGES IN BASELINE FEDERAL COST ESTIMATE:

Division: Pacific Ocean Project: Kahoma Stream, Maui, Hawaii (Continuing)

Item	Estimates Presented to Congress ($1,000) Original Baseline (1)	Cumulative Changes (2)	Last (3)	Incremental Changes (4)	Current (5)
Federal Cost (Price Level)	$15,400 (Oct 83)		$15,400		$16,800 1/
Reason for Change				($1,400) 1/	
a. Price Escalation				1,400	
b. Design Changes					
c. Additional Function Added Under General Authorization					
d. Authorized Modification					
e. Post-Contract Award and Other Estimating Adjustments					
f. Schedule Changes					
g. Sundry					
h. Real Estate					

1/ Includes $1,300 allowance for estimated inflation from 1 October 1985 through the construction period.

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REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL				CLASSIFICATION: Local Protection Project - Flood Control		
SUMMARY CONSTRUCTION PROGRAM (PB-1) FISCAL YEARS 19 86 AND 19 87						
LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Channel	16,200,000	0	160,000	6,690,000	9,350,000
2	Engineering and Design	800,000	703,000	22,000	30,000	45,000
3	Supervision and Administration	1,000,000	66,000	18,000	380,000	536,000
4						
5	Total Applied Cost (Fed Funds and					
6	Non-Fed Contributions)	18,000,000	769,000	200,000	7,100,000	9,931,000
7	Undistributed Cost (None)					
8	Total Project Cost (Fed Funds and					
9	Non-Fed Contributions)	18,000,000	769,000	200,000	7,100,000	9,931,000
10	Pending Adjustments (None)					
11	Total Cost (Fed and Non-Fed Funds)	18,000,000	769,000	200,000	7,100,000	9,931,000
12	Undelivered Orders (None)					
13	Total Obligations (Fed and Non-Fed Funds)		769,000	200,000	7,100,000	9,931,000
14						
15	Federal Funds					
16	Total Applied Cost	16,800,000	769,000	200,000	6,500,000	9,331,000
17	Undistributed Cost (None)					
18	Total Project Cost	16,800,000	769,000	200,000	6,500,000	9,331,000
19	Pending Adjustments (None)					
20	Total Cost	16,800,000	769,000	200,000	6,500,000	9,331,000
21	Undelivered Orders (None)					
22	Total Obligations		769,000	200,000	6,500,000	9,331,000
23						
24	Non-Fed Contributions					
25	Total Applied Cost	1,200,000	0	0	600,000	600,000
26	Undistributed Cost (None)					
27	Total Project Cost	1,200,000	0	0	600,000	600,000
28	Pending Adjustments (None)					
29	Total Cost	1,200,000	0	0	600,000	600,000
30	Undelivered Orders (None)					
31	Total Obligations		0	0	600,000	600,000
32						
33						

EFFECTIVE DATE	DIVISION	REGION	PROJECT
1 Jan 1986	Pacific Ocean	Hawaii	Kahoma Stream
	DISTRICT	BASIN Maui	

ENG FORM 1 SEP 76 2200 (FR 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986 1682

1682

REPORTS CONTROL SYMBOL: DAEN-CWB-13

APPROPRIATION TITLE: CONSTRUCTION GENERAL	CLASSIFICATION: Local Protection Project - Flood Control

SUMMARY CONSTRUCTION PROGRAM (PB-1)

FISCAL YEARS 19 86 AND 19 87

LINE NO	ITEM	PROJECT COST ESTIMATE	TOTAL TO 30 SEP 19 85	CURRENT FY 19 86	BUDGET FY 19 87	BALANCE TO COMPLETE AFTER FY 19 87
	(a)	(b)	(c)	(d)	(e)	(f)
1	Method of Financing					
2	Federal Funds	16,800,000				
3	Allocations		769,000	200,000	6,500,000	
4	Unobligated Carryover from Prior Year		0	0	0	
5	Total Funds Available for Obligations		769,000	200,000	6,500,000	
6	Appropriations Required			200,000	6,500,000	9,331,000
7						
8	Non-Federal Costs					
9	Cash Contributions	1,200,000	0	0	600,000	600,000
10	Other Costs					
11	Lands and Damages	2,200,000	0	2,200,000	0	0
12	Relocations	3,900,000	90,000	0	1,600,000	2,210,000
13	Others (None)					
14	Total Non-Federal Cost	7,300,000	90,000	2,200,000	2,200,000	2,810,000
15						
16	Total Project Cost					
17	Federal (Corps) Costs and Non-Federal					
18	Costs	24,100,000	859,000	2,400,000	8,700,000	12,141,000
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						

EFFECTIVE DATE	DIVISION / DISTRICT	REGION / BASIN	PROJECT
1 Jan 1986	Pacific Ocean	Hawaii / Maui	Kahoma Stream

ENG FORM 1 SEP 76 2200 (ER 11-2-240) EDITION OF 1 NOV 74 IS OBSOLETE. 4 FEB 1986

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PACIFIC OCEAN DIVISION
JUSTIFICATION OF ESTIMATE

APPROPRIATION TITLE: Operation and Maintenance, General, FY 1987

1. Navigation.

a. Channels and Harbors.

The program request of $1,786,000 provides for completion of rehabilitation work on breakwater at Nawiliwili Harbor. It also provides for salaries, maintenance of display and slide projection rooms and materials essential in the operation of the Regional Visitor Center.

	OBLIGATIONS			
Project	Actual FY 1985	Estimated FY 1986	Estimated FY 1987	Explanation of Major Changes
	$	$	$	
Barbers Point Harbor	47,000	81,000	61,000	Replace major equipment in FY 86.
Nawiliwili Harbor	63,800	2,021,000	1,725,000	Initiate breakwater repairs in FY 86 and complete in FY 87.
Other Projects Maintained Periodically	95,500	141,000		
Sub-total - Channels and Harbors	206,300	2,243,000	1,786,000	
b. Locks and Dams. NONE				
TOTAL NAVIGATION	206,300	2,243,000	1,786,000	

2. Flood Control.

a. Reservoirs. NONE

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b. Channel Improvements, Inspection, and Miscellaneous.

The program request of $9,000 provides for the inspection of completed works during FY 1987.

Project	OBLIGATIONS Actual FY 1985	Estimated FY 1986	Estimated FY 1987	Explanation of Major Changes
	$	$	$	
Inspection of Completed Works	8,900	9,000	9,000	
Inspection of Non-Federal Levees	0	4,000	0	Inspection of Federally repaired levees pursuant to PL 84-99 in FY 86.
Sub-total - Channel Improvements Inspection, and Miscellaneous Maintenance	8,900	13,000	9,000	
TOTAL FLOOD CONTROL	8,900	13,000	9,000	

3. Multiple-Purpose Power Projects. NONE

4. Protection of Navigation.

The program request of $769,000 provides for accomplishing the work essential to the administration and enforcement of specified laws enacted for the protection of navigation, particularly Section 10, River and Harbor Act, 1899; Section 402 and 404 of FWPCA Amendment of 1972; and Section 103 of Marine Protection Research and Sanctuary Act of 1972, involving the issuance and review of permits for discharge into navigable waters. It also provides for condition surveys of 3 harbors during the budget year.

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PACIFIC OCEAN DIVISION
JUSTIFICATION OF ESTIMATE

Project	OBLIGATIONS Actual FY 1985	Estimated FY 1986	Estimated FY 1987	Explanation of Major Changes
	$	$	$	
General Regulatory Functions	653,700	688,000	684,000	
Project Condition Surveys	86,800	118,000	85,000	Condition surveys to be conducted at four harbors in FY86 and in FY87 condition surveys to be conducted at three harbors.
TOTAL PROTECTION OF NAVIGATION	740,500	806,000	769,000	
GRAND TOTAL - PACIFIC OCEAN	955,700	3,062,000	2,564,000	

1686

1686

4 FEB 1986

Mr. BEVILL. General, I am going to submit several questions I have here for the record. Mr. Akaka has asked me to submit his questions. Mr. Sunia also has requested his questions be submitted for the record.

[The information follows:]

Questions Submitted by Congressman Bevill

KEOPU-HIENALOLI STREAM

Mr. BEVILL. Describe the Keopu-Hienaloli Stream study which is one of the new study starts in the FY 1987 budget.

General RYAN. This study was requested by the Mayor of Hawaii County informally in June 1985 and reconfirmed by letter dated January 24, 1986 indicating his understanding and willingness to cost share 50 percent of study costs if proceeding to a feasibility study. The Keopu-Hienaloli Stream flows through the village of Kailua, a growing economic center in west Hawaii. This urbanized flood plain consists of commercial and residential development having a value of about $70 million. Floods in 1982, 1974 and 1968 caused estimated damages of $1.0 million, $250,000 and $100,000, respectively. Reoccurrence of 1982 magnitude flood in this area today will probably result in estimated damages of approximately $1.2 million.

HARBORS AND RIVERS IN THE TERRITORY OF GUAM

Mr. BEVILL. Explain the requirement for a typhoon stage-frequency analysis for Agana Bay in connection with the Harbors and Rivers in the Territory of Guam study.

General RYAN. We have determined that the coastal areas of low-lying flood plain in Agana have a potential threat from typhoon-generated waves from Agana Bay. A stage-frequency model study was initiated in FY 1985 to define potential flooding depths and frequencies. The results, which are to be available this summer, will be used to formulate and evaluate alternative measures for flood protection.

NORTHERN MARIANA ISLANDS COMPREHENSIVE STUDY

Mr. BEVILL. How are you able to reduce the cost of the Northern Mariana Islands study by $1.4 million?

General RYAN. The study cost estimate of $2,035,000 was based on preliminary identification of needs to be investigated in the reconnaissance study stage. The reconnaissance phase study was completed in June 1985, and it was determined that all study elements with the exception of commercial navigation on Saipan were considered to be more appropriate for non-Federal interests to address or no problem was identified for further study. Based on primary study element in the feasibility study to be only on commercial navigation on Saipan, the study cost estimate was revised to reflect the remaining study element, which resulted in reduction of $1.4 million as study elements such as water supply, flood protection, water quality control enhancement, shoreline protection, economic and human resources were deleted.

AGANA RIVER, GUAM

Mr. BEVILL. Describe the Agana River, Guam, project for which you are requesting $700,000 for initiation in FY 1987.

General RYAN. The project plan for Agana River flood control improvement consists essentially of augmentation of natural storage in the Agana swamp using levees and floodwalls and provision for controlled release of stored flood waters through an improved channel to the ocean. The 100-year flood protection consists of 2,500 feet of levee and floodwall and 1,700 feet of channel improvement. Provisions for controlled overflow have been included in the project design should the 100-flood event be exceeded.

KAHOMA STREAM

Mr. BEVILL. Has a written cost sharing agreement been obtained from the local sponsors of the Kahoma Stream, Maui, Hawaii project?

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General RYAN. The final local cooperation agreement has been drafted and is currently being reviewed by our headquarters. As I stated in my status report, signing by the local sponsor is expected in May 1986.

OPERATION AND MAINTENANCE

Mr. BEVILL. I note your request for O&M is $498,000 less than the FY 1986 appropriation. Are all your projects being properly maintained?

General RYAN. Yes, sir. Our FY 1987 budget request is sufficient for the identified maintenance requirements.

Questions Submitted by Congressman Akaka

KAHULUI HARBOR BOAT RAMP

Question. Local boaters have raised concerns about the build-up of sand at the Kahului Harbor boat ramp. What is the nature of this problem and what actions are being considered to correct it?

Answer. Accumulation of sand at the boat ramp site by natural forces makes the launching and retrieving difficult for the boaters. Corps' investigations have indicated that the sand accumulation is a continuing problem which requires maintenance by the non-Federal local sponsors. In order to alleviate this problem, a study was initiated to determine the feasibility of potential Federal improvement to develop a protected launching and mooring facility for use by commercial fishermen. Our analysis indicates that there are insufficient benefits based on estimated potential increased fish catch by the National Marine Fisheries Services for any further Corps consideration for navigation improvement. Accordingly, sand removal by non-Federal interests will continue to be required.

SAND ISLAND SHORE PROTECTION

Question. As you know, H.R. 2959, the Energy and Water Development Appropriation Bill for FY 1986 provides $893,000 under the Small Beach Erosion Control account (Section 103) for the Sand Island Shore Protection project. What is the nature of the problem at Sand Island and what is the status of the release of funds to undertake this work?

Answer. Shore and beach protection is required because of continuous erosion on the ocean side of Sand Island Park. Benefits for this project are entirely recreational. The Administration's view is that recreation projects are best developed by non-Federal interests. Consequently, recreation projects have low budget priority and accordingly construction funds will not be available for Sand Island Shore Protection project. Project data developed to date will be made available for use by the non-Federal sponsor.

Questions Submitted by the Honorable Mr. Sunia, Delegate from American Samoa

TÁU SMALL BOAT HARBOR

Question. The small boat harbor at Táu was completed in 1980. It remains unuseable most of the time because of the wave action inside the harbor basin. The Corps promised to study to determine necessary corrective action. That study was to have been started in the fall of 1984 and last for 8 months.

Answer. We obtained wave data for an eight-month period and an initial wave condition report was completed in September 1985, indicating the harbor entrance is useable about 50 percent of the time. Based on this wave information, we have developed preliminary structural alternatives that could somewhat improve channel navigation conditions, but it is not anticipated that 100 percent utilization will be achievable due to the siting of the harbor. I expect to complete our studies sometime in FY 86. Federal funds expended for this project are nearly at the statutory limit of $2 million. Consequently, any further work must be paid for by American Samoa funds.

We installed a second navigation aid during the summer of 1985 to assist in aligning vessels entering the harbor. Now that the navigation aid has been in use for approximately eight months, we will be following up with the American Samoa government on the effectiveness of the second navigation aid.

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QUESTIONS FROM MR. BLAZ

Mr. BEVILL. Mr. Myers?

Mr. MYERS. I have no questions but I have one from Mr. Blaz. You have covered pretty well his concerns in Guam. You might want to expand on his questions.

[The information follows:]

Questions Submitted by the Honorable Mr. Blaz, Delegate from Guam

AGAT SMALL BOAT HARBOR

Mr. MYERS. What is the status of the Agat Small Boat Harbor in Guam?

General RYAN. We have essentially completed the plans and specifications for this project under the Continuing Authorities Program, Section 107. Upon completion of a satisfactory local cooperation agreement, we will recommend this project for construction funding to the Chief of Engineers and, subject to approval by the Assistant Secretary of the Army for Civil Works, as a construction start this summer.

Mr. MYERS. Is Guam willing to cost-share on this project?

General RYAN. Our contact with the Government of Guam indicates that the sponsor is willing to cost share. Funds have been set aside by the Government of Guam in an account to provide the non-Federal share once the project is approved for construction.

PACIFIC AREA

Mr. MYERS. Thank you for coming all this way.

Mr. BEVILL. The Chair recognizes Mrs. Boggs.

Mrs. BOGGS. Thank you, Mr. Chairman. General, I apologize for not being here earlier. I was chairing another subcommittee hearing. I very much enjoyed being here. We do thank you for your work. I have no questions.

Mr. BEVILL. The Chair recognizes Mr. Watkins.

Mr. WATKINS. General Ryan, welcome. I know you have the Pacific area. Do you have any people assigned to any foreign country that is doing work?

General RYAN. Under my Civil Works responsibility, sir, my people are assigned to U.S. Territories. We do have people assigned to the military program in Japan and Korea, to do construction support of U.S. forces in those countries.

Mr. WATKINS. Would you indicate in the record who authorized that work in those countries?

General RYAN. Our authority to do military work in Japan and Korea is the Status of Forces Agreement between countries.

NANPIL HYDROPOWER PROJECT

Mr. WATKINS. I also want to know how much you have spent for foreign travel, your particular division. I know you are doing a hydropower project.

General RYAN. That is in the State of Pohnpei, in the Trust Territories.

Mr. WATKINS. I see that the contract is $5,622,000 for completion of this project. It doesn't seem like I can get anything done except a study in my area. That project is going to be completed in 1987. I see we are doing a municipal water system in Saipan?

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General RYAN. We did a study on water supply needs, sir. We are not doing anything on a municipal water system. That is being done by other agencies for the Northern Mariana Islands.

AREA OF RESPONSIBILITY

Mr. WATKINS. You do have civil works folks assigned to other areas?

General RYAN. Yes, sir. We have people assigned in U.S. Territories, such as Territory of Guam.

Mr. WATKINS. Outside the Trust areas?

General RYAN. No, sir, none.

Mr. WATKINS. I notice you are requesting a total of $700,000 for construction on the Agana River.

General RYAN. Yes, sir.

MILITARY ASSIGNMENTS

Mr. WATKINS. I would also like to ask—I notice you had overseas assignments. Where were you stationed?

General RYAN. In my responsibilities in other positions of my military duties, I have been assigned to countries such as Thailand, Korea, and Vietnam.

Mr. WATKINS. Were any of those with the Corps?

General RYAN. As a Corps officer, but it was not under the Civil Works program, sir.

Mr. WATKINS. Military?

General RYAN. Yes, sir, as a military officer.

Mr. WATKINS. Would you make that more in-depth part of your record? I would like to know where you have been, what those assignments were.

General RYAN. Yes, sir. I will submit this information for the record.

[The information follows:]

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OVERSEAS MILITARY ASSIGNMENTS

BRIGADIER GENERAL ROBERT H. RYAN

DATES	FOREIGN COUNTRY	ASSIGNMENT
April 1962 to March 1963	Okinawa	Assistant Plans Officer U.S. Army Broadcast and Visual Activity
March 1963 July 1964	Okinawa	Aide De Camp to Deputy Commanding General Headquarters, U.S. Army Ryukyu Islands
September 1966 to July 1967	Thailand	Assistant Operations Officer and Operations Officer Headquarters, 44th Engineer Group
August 1969 to February 1970	Republic of Vietnam	Doctrine and Training Officer Headquarters, U.S. Army Vietnam
February 1970 to September 1970	Republic of Vietnam	Battalion Executive Officer 26th Engineer Battalion 23rd Infantry Division
July 1975 to August 1976	Korea	Battalion Commander 2nd Engineer Battalion 2nd Infantry Division

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OVERSEAS ASSIGNMENTS

Mr. WATKINS. General Hatch, you were in Germany?

General HATCH. That was strictly military, sir. I was the Deputy Chief of Staff for U.S. Military in Europe.

Mr. WATKINS. Any Corps people over there at that time?

General HATCH. Only those assigned to execute the military construction and operations and maintenance.

Mr. WATKINS. Is that what Colonel Harmon has gone over there for?

General HATCH. Yes, sir.

REGIONAL VISITOR CENTER

Mr. WATKINS. I just wanted to look at that closer. You said you funded a visitors' center?

General RYAN. That is at Fort DeRussy, which was authorized under our Barbers Point Harbor project.

Mr. WATKINS. How much does that cost?

General RYAN. Our annual maintenance cost for the Regional Visitor Center is $61,000.

Mr. WATKINS. How much did it cost to build?

General RYAN. The records are here, if I may, sir.

Mr. WATKINS. A rough estimate.

General RYAN. It was approximately $1.0 million including the exhibits, sir.

Mr. WATKINS. I have been trying to get something on a lake that has 12 million people coming to it. I find it can be done in other places, but it doesn't seem like anybody wants to help. I would like to have you provide for the record a listing showing any person that has been assigned on any type of overseas duty, also in the Trust territories, how much time they spend there, and how much of the cost that has been the American taxpayers' money. I would like, for the record, when they went there and when they came back.

General RYAN. Mr. Watkins, may I understand your question a little more clearly? I have people who are assigned under the Civil Works program, which we are addressing here and I also have responsibilities for the military construction program in Pacific Ocean Division. I have a number of people assigned to that responsibility in support of that program in Japan and Korea.

Mr. WATKINS. Although I would like both it is mainly the civil work. I am concerned about. I am concerned about the fact that it doesn't seem like there is any concern about the taxpayers in my area. We aren't doing anything to help them when we are doing all this other work overseas. I am going to look at all this, analyze it, and if necessary I will start with this subcommittee, the full committee, the full House, if necessary. If I feel like it is necessary, I will prevent any of these monies being used this way.

General RYAN. Information on our Civil Works and other Civil Funded Activities outside the State of Hawaii will be provided to the Committee.

[The information follows:]

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FISCAL YEAR 1985

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL CW COST	REIMBURSED COST	PURPOSE OF VISIT
THE FOLLOWING DATA IS SUBMITTED IN RESPONSE TO CONGRESSMAN WATKIN'S REQUEST THAT WE PROVIDE A LIST OF CORPS OF ENGINEERS CIVIL WORKS INTERNATIONAL TRAVEL FOR FISCAL YEARS 1983,84, AND 85. THE DATA HAS BEEN COMPILED FROM THE INDIVIDUAL SUBMISSIONS OF THE SEPARATE CORPS ORGANIZATIONS AND HAS NOT BEEN OTHERWISE REVIEWED BY THE ASSISTANT SECRETARY OF THE ARMY FOR CIVIL WORKS OR THE CHIEF OF ENGINEERS.							
NON-MILITARY FOREIGN TRAVEL BY THE US ARMY CORPS OF ENGINEERS IS UNDERTAKEN IN CONJUNCTION WITH THREE BROAD CATEGORIES: (1) NON-MILITARY INTERNATIONAL TECHNICAL ASSISTANCE PROVIDED BY THE ARMY CORPS OF ENGINEERS AND REIMBURSED BY OTHER US GOVERNMENT AGENCIES, INTERNATIONAL ORGANIZATIONS, OR FOREIGN GOVERNMENTS; (2) ACTIVITIES UNDER MUTUALLY BENEFICIAL SCIENTIFIC AND TECHNOLOGICAL COOPERATIVE AGREEMENTS BETWEEN THE DEPARTMENT OF THE ARMY AND FOREIGN GOVERNMENTS; AND (3) OTHER NON-MILITARY INTERNATIONAL ACTIVITIES.							
IN FISCAL YEAR 1985, FOR EXAMPLE, A TOTAL OF $617,575.73 WAS SPENT BY THE CORPS OF ENGINEERS FOR FOREIGN TRAVEL FOR ALL THREE CATEGORIES. OF THIS AMOUNT $104,135.04 WAS SPENT FOR TRAVEL UNDER CATEGORY (1) AND WAS FULLY REIMBURSED, $17,251.31 WAS SPENT FOR TRAVEL UNDER CATEGORY (2) AND THE REMAINDER $496,184.38 WAS FOR CATEGORY (3).							
TRAVEL INVOLVING THE USE OF CORPS OWNED AIRCRAFT DOES NOT INCLUDE THE COST OF AIRCRAFT OPERATIONS. WITH THE CONCURRENCE OF MR WATKIN'S STAFF, TRAVEL BY THE JACKSONVILLE DISTRICT TO PUERTO RICO HAS BEEN EXCLUDED. ADDITIONALLY, THE FOLLOWING DATA HAS BEEN COMPILED FROM AVAILABLE RECORDS. IN SOME INSTANCES RECORDS FOR FISCAL YEARS 1983 AND 1984 ARE INCOMPLETE OR UNAVAILABLE.							
NED	CANADA	OCT84	3	2	$700.00		INT'L ST. CROIX RIVER BOARD OF CONTROL MEETING
	JAPAN	OCT84	9	1	$2,500.00		INFO EXCHANGE ON TOXIC DREDGED MATERIAL
NAO	BELGIUM	14JUN85	15	1	$3,000.00		CONFERENCE ATTENDANCE
NAB	NONE						
NAN	NONE						
NAO	GERMANY	18OCT84	18	1	$2,273.90		COURSE INSTRUCTOR
NAP	NONE						
SAD	THAILAND/INDIA	30JAN85	76	1		$6,855.00	REIMBURSED BY UN-INSPECTIONS
	THAILAND	14NOV85	11	1		$741.00	REIMBURSED BY UN-INSPECTIONS
	PANAMA	29JUL85	6	1	$1,344.00		VISIT BALLARD CUT OF PANAMA CANAL
SAC	NONE						
SAJ	NONE						
SAM	KOREA	15MAR85	9	1	$2,412.00		INSTRUCT COURSE
	JAPAN/SAUDI	22MAR85	59	1	$9,776.00		EVALUATION OF STATE DEPT FACILITIES
	KOREA	18OCT84	9	1	$1 844.00		INSTRUCT COURSE
SAS	CANADA	28JUL85	8	1	$1,417.00		ATTEND DESIGN MEETING
SAW	GERMANY	26JAN85	14	1	$2,545.00		ASSIST IG ON AUDIT
ORD	CANADA	29OCT84	6	1	$949.00		REVIEW MODEL STUDY
	BELGIUM	15JUN85	14	1	$3,152.00		24TH INT'L CONGRESS
	CANADA	19MAY85	6	1	$963.00		REVIEW MODEL STUDY
	KOREA	11APR85	8	1	$1,866.00		CE COURSE INSTRUCTOR
	KOREA/JAPAN	18JAN85	9	1	$1,853.00		FIO TRAVEL-FRAUD ASSESSMENT
NAW	SAUDI ARABIA	27NOV84	10	1	$3,903.88		INSTRUCT VALUE ENGINEERING WORKSHOP
	GERMANY	10JUL85	18	1	$3,712.98		INSTRUCT VALUE ENGINEERING WORKSHOP
SAL	KOREA	29MAR85	9	1	$1,833.00		COURSE INSTRUCTOR
	BELGIUM	14JUN85	7	1	$2,044.25		US DELEGATE WINNER OF THE PROF GUSTAVE ALLEMS AWARD
	KOREA	29MAR85	9	1	$2,178.78		COURSE INSTRUCTOR

NOTE: DOES NOT INCLUDE TRAVEL OF FORMER CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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FISCAL YEAR 1985

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL CW COST	REIMBURSED COST	PURPOSE OF VISIT
CRH	NONE						
DRP	NONE						
NCD	CANADA	26FEB85	2	1	$472.37		MEETING W/INT'L ST LAWRENCE RIVER BOARD OF CONTROL
	CANADA	21MAY85	6	1	$866.00		INTERNATIONAL JOINT COMMISSION
	CANADA	19JUN85	2	1	$315.00		UBLCC STUDY MANAGEMENT COMMITTEE MEETING
	CANADA	21MAY85	4	1	$635.00		INTERNATIONAL JOINT COMMISSION
	CANADA	29MAY85	1	1	$180.00		MEETING W/ST MARYS RAPIDS REMEDIAL WORKS PROJECT
	CANADA	21MAY85	5	1	$679.00		INTERNATIONAL JOINT COMMISSION
	CANADA	24JUN85	4	1	$684.78		IJC BIENNIAL MEETING ON GREAT LAKES WATER QUALITY
	CANADA	24JUN85	4	1	$684.78		INTERNATIONAL JOINT COMMISSION
	CANADA	21MAY85	2	2	$955.00		MEETING OF WESTERN DREDGING ASSOCIATION
	CANADA	17JUL85	3	1	$629.78		IJC GREAT LAKES WATER LEVELS WORKSHOP
	CANADA	25JUN85	2	1	$529.51		IJC WATER QUALITY BOARD MEETING
	CANADA	24JUN85	2	1	$529.78		IJC WATER QUALITY BOARD MEETING
	CANADA	23JUN85	3	1	$694.00		GREEN RIBBON PANEL BRIEFINGS
	GERMANY	11FEB85	7	1	$1,797.00		MEETING W/ ST LAWRENCE RIVER BOARD OF CONTROL
	CANADA	9SEP85	2	1	$465.00		INTERNATIONAL JOINT COMMISSION
NCB	CANADA	10CT84	3	1	$342.93		INTERNATIONAL JOINT COMMISSION
	CANADA	4DEC84	5	1	$231.74		INTERNATIONAL JOINT COMMISSION
	CANADA	15AUG85	3	1	$784.77		INTERNATIONAL JOINT COMMISSION
	CANADA	10OCT84	2	1	$339.65		INTERNATIONAL JOINT COMMISSION
	CANADA	20FEB85	3	1	$415.36		INTERNATIONAL JOINT COMMISSION
	CANADA	9SEP85	1	1	$340.20		INTERNATIONAL JOINT COMMISSION
	CANADA	31JUL85	3	2	$1,036.79		INTERNATIONAL JOINT COMMISSION
	CANADA	26FEB85	4	1	$305.70		INTERNATIONAL JOINT COMMISSION
	CANADA	29NOV84	2	5	$994.40		INTERNATIONAL JOINT COMMISSION
	CANADA	30MAY85	2	2	$377.50		INTERNATIONAL JOINT COMMISSION
	CANADA	10CT84	1	1	$31.90		INTERNATIONAL JOINT COMMISSION
	CANADA	15AUG85	1	1	$17.85		INTERNATIONAL JOINT COMMISSION
	CANADA	15AUG85	1	2	$0.00		INTERNATIONAL JOINT COMMISSION
	CANADA	20AUG85	1	1	$17.25		INTERNATIONAL JOINT COMMISSION
	CANADA	17JUN85	1	2	$0.00		INTERNATIONAL JOINT COMMISSION
	CANADA	4DEC84	2	2	$784.00		INTERNATIONAL JOINT COMMISSION
	CANADA	10CT84	3	1	$216.50		INTERNATIONAL JOINT COMMISSION
	CANADA	20FEB85	2	2	$451.05		INTERNATIONAL JOINT COMMISSION
	CANADA	3MAY85	2	1	$269.50		INTERNATIONAL JOINT COMMISSION
	CANADA	10CT84	4	1	$296.65		INTERNATIONAL JOINT COMMISSION
	CANADA	17JUN85	2	1	$332.63		INTERNATIONAL JOINT COMMISSION
	CANADA	11OCT84	1	1	$0.00		INTERNATIONAL JOINT COMMISSION
	CANADA	20AUG85	1	1	$17.49		INTERNATIONAL JOINT COMMISSION
	CANADA	10DEC84	4	2	$457.25		INTERNATIONAL JOINT COMMISSION
	CANADA		2	1	$416.00		IJC PRESENTATION
NCC	CANADA		5	1	$455.00		IJC MEETING
	CANADA	21MAY85	4	1	$594.00		IJC MEETING
	CANADA	21MAY85	4	1	$581.00		IJC MEETING
	CANADA	23JUN85	2	1	$476.00		IJC MEETING
	CANADA	24JUN85	2	1	$270.00		IJC SUPPORT
NCE	CANADA	11OCT84	2	1	$270.00		MEETING OF WESTERN DREDGING ASSOCIATION
	CANADA	17JUL85	3	1	$176.00		GREAT LAKES NETWORK BOARD
	CANADA	23OCT84	2	1	$270.00		IJC MEETING
	CANADA	23MAY85	1	1	$189.00		

NOTE: DOES NOT INCLUDE TRAVEL OF CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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FISCAL YEAR 1985

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL CW COST	REIMBURSED COST	PURPOSE OF VISIT
	CANADA	9SEP85	3	4	$1,077.00		IJC MEETING
	CANADA	13NOV84	3	3	$1,201.00		IJC SUPPORT
	CANADA	22MAY85	3	3	$1,834.00		IJC FORUM
	CANADA	30OCT84	2	1	$310.00		ICE INFO GROUP MEETING
	CANADA	4DEC84	1	3	$884.00		ST LAWRENCE SEAWAY MEETING
	CANADA	11MAR85	2	1	$284.00		SEAWAY SHIPPING SEASON MEETING
	CANADA	17JUL85	2	1	$140.00		MEETING OF WESTERN DREDGING ASSOCIATION
	CANADA	29NOV84	2	1	$190.00		GREAT LAKES NETWORK BOARD
	CANADA	7FEB85	3	1	$251.00		WORKSHOP CLIMATE IMPACT ASSESSMENT
MCR	NONE						
	CANADA	JUL85	3	3	$1,498.00		SITE VISIT-SOURIS RIVER STUDY
	CANADA	NOV84	2	3	$1,228.00		IJC
	CANADA	MAY85	5	1	$1,000.00		PRESENTED PAPER-5TH NORTH AMERICAN FUR TRADE CONFERENCE
	CANADA	APR85	1	1	$278.00		MEETING-INT'L RAINY LAKE BOARD OF CONTROL
	CANADA	JUL85	4	1	$653.00		LAKE OF THE WOODS CONTROL BOARD MEETING
	CANADA	MAY85	2	2	$894.00		IJC
	CANADA	APR85	3	1	$450.00		SITE VISIT-SOURIS RIVER STUDY
MCS	CANADA	OCT84	9	3	$1,458.00		SITE VISIT-SOURIS RIVER STUDY
LMVD	SAUDI ARABIA	24NOV84	10	1	$3,668.46		INSTRUCTOR CE COURSE
	CANADA	3DEC84	4	2	$2,796.92		YAZOO PUMP STATION CONSULT
	ENGLAND	5JUN85	4	1	$791.00		PIANC-FLEXIBLE ARMOURED REVETMENTS MEETING
	NETHERLANDS	22MAR85	10	1	$1,354.91		PIANC-FLEXIBLE ARMOURED REVETMENTS MEETING
	CANADA	3DEC84	4	4	$11,000.00		REVIEW PUMP DESIGN FOR YAZOO BACKWATER PROJECT
	NIGER	4SEP85	24	1		$10,939.00	REIMBURSED BY AID
	NIGER	18NOV84	23	1		$23,140.00	REIMBURSED BY AID
	PAKISTAN	29FEB85	11	1	$8,000.00	$3,800.00	REIMBURSED BY WBF-CHANNEL STAB CONF
LMK	NIGER	11NOV84	34	1		$12,973.00	REIMBURSED BY AID
	SWITZERLAND	14JUN85	25	1	$4,044.63		CONFERENCE
	GERMANY	8MAY85	10	1	$1,490.00		TRAINING
LMS	JAPAN	7DEC84	13	1	$2,853.31		CONFERENCE
LMW	NONE						
	KOREA	23JAN85	5	1	$450.00		TRAVEL FRAUD ASSESSMENT
	THAILAND	23JAN85	21	1	$4,237.33		ASSIST IN FLOOD CONTROL PROGRAM
LMV	JAPAN	19JAN85	8	3	$2,236.00		TRAVEL FRAUD ASSESSMENT
NAD	NONE						
NAN	NONE						
NAO	BRAZILIA	16MAR85	10	1	$3,246.26		ACTIVITIES ON IRRIGATION DEVELOPMENT
SWD	GERMANY	29OCT84	17	1	$2,028.00		COURSE INSTRUCTOR
	GERMANY	23JAN85	10	1	$2,180.00		COURSE INSTRUCTOR
	GERMANY	27NOV84	10	1	$1,569.00		COURSE INSTRUCTOR
SWA	NONE						
SWG	NONE						
SWF	SAUDI ARABIA	22OCT84	14	1	$4,065.00		COURSE INSTRUCTOR
	SWITZERLAND	21JUN85	10	1	$2,250.00		ATTEND INT'L COMMISSION ON LARGE DAMS
	GERMANY	22NOV84	10	1	$1,935.00		COURSE INSTRUCTOR
	KOREA	29MAR85	9	1	$2,529.00		COURSE INSTRUCTOR
SWL	NONE						

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FISCAL YEAR 1985

DIV#/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL Co COST	REIMBURSED COST	PURPOSE OF VISIT
	GERMANY	11AUG85	8	1	$1,650.24		MODEL DIVISION BRIEFING
SNT	CANADA	17MAR85	5	1	$997.16		N. AMERICAN PAVEMENT MANAGEMENT CONFERENCE
NPD	CANADA	30CT84	5	1	$945.00		ATTEND IEEE WEST COAST SUBCOMMITTEE MEETING
	CANADA	30CT84	2	1	$199.00		COLUMBIA RIVER TREATY OPERATING COMMITTEE MEETING
	CANADA	29JUL85	5	1	$1,385.00		EVALUATE CAPABILITY OF TURBINE MANUFACTURES
	CANADA	28NOV84	1	2	$57.00		COLUMBIA RIVER TREATY PERMANENT OPERATING BD MEETING
	CANADA	29JAN85	3	2	$384.00		INSPECTION OF ACC PROJECT
	BELGIUM/HOLLAND	15MAR85	8	1	$1,988.00		OBSERVE DUTCH DREDGE PRODUCTION
	CANADA	13SEP85	3	1	$101.00		US/CANADIAN ENGINEERING SCHOOL MEETING
	CANADA	14JUL85	6	3	$1,197.00		IEEE WEST COAST MEETING
	CANADA	4AUG85	4	1	$957.00		PRESENT PAPER AT INT'L SYMPOSIUM ON REGULATED STREAMS
	CANADA	29SEP82	6	1	$1,253.00		ATTEND ELECTRIC DOBLE COMMITTEE MEETINGS
	CANADA	9JUL85	6	2	$1,410.00		INSPECTION OF ACC PROJECT
	CANADA	16SEP85	5	1	$799.00		ELECTRIC POWER RESEARCH INSTITUTE MEETING
	CANADA	40CT84	1	3	$687.00		COLUMBIA RIVER TREATY OPERATING COMMITTEE MEETING
	CANADA	7NOV84	1	2	$446.00		MEETING W/TREATY HYDROMET COMMITTEE
	CANADA	7NOV84	2	1	$271.00		REVIEW REFILL STUDIES W/BC HYDRO REPS
	CANADA	20FEB85	1	1	$17.00		COLUMBIA RIVER TREATY OPERATING COMMITTEE MEETING
	CANADA	9JUL85	1	1	$23.00		COLUMBIA RIVER TREATY OPERATING COMMITTEE MEETING
	CANADA	10JUL85	8	1	$333.00		MEETING OF PLNG & COORD COMMIT. OF WEST SYS COORD COUNC
	CANADA	10CT84	5	1	$461.00		ATTEND TECH INFO MEETING AT BC HYDRO
	CANADA	21JUL85	5	1	$755.00		ATTEND INT'L SYMPOSIUM ON AQUATIC PLANT MANAGEMENT
NPA	CANADA	23AUG85	4	1	$209.00		SITE VISIT
	CANADA	11SEP85	6	2	$3,266.00		MEETING ON OIL AND GAS DEVELOPMENT
NPP	AMSTERDAM	13OCT84	10	1	$1,134.00		ATTEND DAM PROJECT MEETING
	CANADA	13SEP85	3	1	$173.00		ATTEND JOINT US/CANADIAN ENGINEER ACTIVITIES
	CANADA	27SEP85	12	1	$750.00		ATT ND WORLD CONGRESS ON INTERPRETATION
	CANADA	12MAR85	4	2	$535.00		MEET FOR DOBLE ENGINEERING PAPER
	BELGUIM/NETHERL	15MAR85	9	1	$940.00		OBSERVE DUTCH DREDGE TECHNOLOGY
NPS	CANADA	17NOV84	3	1	$659.00		ATTEND IJC
	KOREA	7JUN85	15	1	$2,401.00		ASSIST FAR EAST DISTRICT W/HARRIS H5000 COMPUTER
	CANADA	21MAY85	3	3	$663.00		ANNUAL SNOW RECOM
	CANADA	21JUL85	7	1	$486.00		ATTEND MEETING OF AQUATIC PLANT MANAGEMENT SOCIETY
	CANADA	13SEP85	1	5	$340.00		US/CANADA ENGINEER LIAISON VISIT
NPW	CANADA	6MAY85	5	1	$1,216.00		INSPECT THRUST BEARING
SPD	SWITZERLAND		20	1	$2,256.75		INTERNATIONAL COMMITTEE ON LARGE DAMS
SPL	SAUDI ARABIA		12	1	$8,344.00		INSTRUCTON CE COURSE
SPA	NONE						
SPN	NONE						
POD	AM SAMOA	27JAN85	5	1	$1,662.00		SITE VISIT
	TIPI	15JUL85	10	1	$1,116.00		SITE INVESTIGATION
	GUAM	30EC84	4	3	$3,558.00		EPA INSPECTION
	CNMI	10CT84	8	1	$549.00		DREDGING INSPECTION
	TIPI	220CT84	4	1	$860.00		PERMIT INSPECTION
	CNMI	9SEP85	5	2	$2,335.00		SITE VISIT
	AM SAMOA	12MAY85	10	2	$1,875.00		PUBLIC MEETING
	CNMI	27MAY85	8	2	$2,115.00		WORKSHOP

NOTE: DOES NOT INCLUDE TRAVEL OF FORMER CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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FISCAL YEAR 1985

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL GN COST	REIMBURSED COST	PURPOSE OF VISIT
	TTPI	25FEB85	9	1	$1,793.00		PERMIT INSPECTION
	CNMI	15APR85	6	2	$1,695.00		WORKSHOP
	GUAM	17MAR85	6	1	$915.00		SITE INVESTIGATION
	CNMI	7FEB85	14	1	$1,719.00		SITE VISIT
	GUAM	23FEB85	11	1	$1,720.00		SITE INVESTIGATION
	CNMI	11JAN85	7	1	$263.00		SITE VISIT
	GUAM	25NOV84	6	2	$1,598.00		SITE INVESTIGATION
	CNMI	15NOV84	3	1	$695.00		MEETING ON CIP
	GUAM	31OCT84	30	4	$3,045.00		BORING INSPECTION
	CNMI	15OCT84	34	2	$4,898.00		SITE VISIT
	AM SAMOA	27JUL85	14	2	$2,079.00		SITE VISIT
	CNMI	14OCT84	10	2	$2,117.00		SITE VISIT
	GUAM	29OCT84	3	1	$726.00		SITE INVESTIGATION
	CNMI	9OCT84	4	1	$1,149.00		MEETING ON CIP
	AM SAMOA	10JUL85	22	1	$2,865.00		SITE VISIT
	MARINI ATOLL	17JUL85	23	1	$145.00		ENVIRONMENTAL STUDY
	AM SAMOA	9JAN85	4	1	$983.00		CONFERENCE
	AM SAMOA	9JUN85	5	1	$1,077.00		SITE VISIT
	AM SAMOA	18JUN85	6	1	$1,317.00		SITE VISIT
	AM SAMOA	19MAY85	5	1	$942.00		SITE VISIT
	CNMI	6MAR85	10	1	$1,025.00		SITE VISIT
	AM SAMOA	14APR85	12	2	$3,087.00		SITE VISIT
	AM SAMOA	22JUL85	5	1	$948.00		SITE VISIT
	AM SAMOA	7AUG85	6	1	$944.00		SITE VISIT
	GUAM	27MAY85	5	1	$1,006.00		EPA INSPECTION
	NEW ZEALAND	6MAR85	11	1	$2,018.00		9TH PACIFIC CONFERENCE
	AM SAMOA	19MAY85	5	1	$948.00		SITE VISIT
	THAILAND	26APR85	9	1		$2,051.00	REIMBURSED BY USIA-VOICE OF AMERICA
	THAILAND	16MAY85	15	1		$2,717.00	REIMBURSED BY AID
	CNMI	20OCT84	10	1	$1,029.00		SITE VISIT
	THAILAND	29JUL85	7	1		$1,557.00	REIMBURSED BY USIA-VOICE OF AMERICA
	THAILAND	31JUL85	19	1		$2,417.00	REIMBURSED BY USIA-VOICE OF AMERICA
	THAILAND	22SEP85	86	1		$9,827.00	REIMBURSED BY USIA-VOICE OF AMERICA
	INDIA	26APR85	15	1		$919.00	REIMBURSED BY AID-GANGES RIVER
	TTPI	29OCT84	3	1	$979.00		PROJECT COORDINATION
	TTPI	8DEC84	9	1	$1,519.00		SITE INVESTIGATION
	TTPI	12JAN85	10	2	$2,138.00		PROJECT COORDINATION
	TTPI	29APR85	14	2	$2,892.00		SITE INVESTIGATION
	TTPI	27JUN85	9	1	$1,567.00		ECONOMIC BASE STUDY
	CNMI	3JAN85	8	1	$1,169.00		SITE VISIT
	TTPI	16JUL85	7	1	$1,260.00		SITE INVESTIGATION
	GUAM	22JAN85	4	1	$840.00		EPA INSPECTION
	TTPI	24FEB85	13	2	$4,776.00		PERMIT INSPECTION
	GUAM	22JUN85	3	1	$704.00		SITE INVESTIGATION
	TTPI	29OCT84	8	1	$897.00		SITE INVESTIGATION
	GUAM	2MAR85	10	2	$2,143.00		SITE INVESTIGATION
	GUAM	25JUL85	2	1	$283.00		PERMIT INSPECTION
	GUAM	12NOV84	3	1	$695.00		MEETING ON CIP
	AM SAMOA	13JAN85	5	1	$687.00		SITE VISIT
	AM SAMOA	15MAY85	3	1	$746.00		EPA INSPECTION

NOTE: DOES NOT INCLUDE TRAVEL OF PEACE CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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FISCAL YEAR 1993

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL CW COST	REIMBURSED COST	PURPOSE OF VISIT
	GUAM	15APR93	2	1	$600.00		WORKSHOP
	GUAM	6JUL93	7	1	$1,251.00		EVALUATE WATER SUPPLY
	THAILAND	27MAY93	10	1		$2,214.00	REIMBURSED BY USIA-VOICE OF AMERICA
	GUAM	3JAN93	8	1	$527.00		SITE INVESTIGATION
	CNMI	3MAY93	1	1	$165.00		PERMIT INSPECTION
	GUAM	23OCT84	3	1	$78.00		SITE INVESTIGATION
	CNMI	18MAR93	6	1	$327.00		DREDGING INSPECTION
	FAR EAST	4FEB93	72	1		$5,930.00	REIMBURSED BY UN-ECONOMIC & SOCIAL COMMISSION FOR ASIA
	GUAM	22JUN93	5	1	$1,988.00		SITE INVESTIGATION
POH	AM SAMOA	5OCT84	26	1	$2,537.00		SITE INVESTIGATION
	ITPI	29OCT84	4	1	$556.00		SITE INVESTIGATION
	CNMI	21OCT84	16	1	$1,337.00		SITE INVESTIGATION
	AM SAMOA	30NOV84	4	1	$459.00		SITE INVESTIGATION
	AM SAMOA	16APR85	5	1	$498.00		SITE INVESTIGATION
SAM	PUERTO RICO	5MAY93	6	3	$3,627.00		SITE VISIT-RIO PUERTO NUEVE PROJECT
	JAPAN/KOREA	8JUN93	16	1	$3,321.00		14TH PACIFIC ENGINEER FAMILY CONFERENCE
	GERMANY	9JUN93	22	1	$1,500.00		DEVELOPMENT OF AUTOMATION PLAN
	GERMANY	17AUG93	9	1	$1,787.00		INSPECT EUR R&D
	HONDURAS	13JAN93	16	1	$1,052.00		DEVELOPMENT OF CONSTRUCTION MANUAL
	GERMANY	19AUG93	6	1	$1,165.00		DEVELOPMENT OF AUTOMATION PLAN
CERL	GERMANY	8DEC84	19	1	$1,720.00		COMMAND INSPECTION
CRREL	CANADA	11OCT84	2	1	$316.00		DISCUSS RESULTS OF THE LIGHTPIER PLUCKING
	GREENLAND	SEP93	19	1	$850.00		MEETING W/DANISH/GREENLAND ENGINEERS
	CANADA	13MAY93	3	1	$396.00		RETRIEVE INSTRUMENTATION FROM THE YANACHICHE LIGHTPIER
EASA	JAPAN	8APR93	5	1	$2,057.92		ATTEND PACIFIC WIDE CONFERENCE ON INFO&RESOURCE MGT
ETL	NONE						
NAD	KOREA	21OCT84	18	4	$7,314.03		AUDIT
	GERMANY	18MAY85	8	1	$1,623.97		TEACH CLASS
	GERMANY	3NOV84	16	1	$2,825.24		ADMINISTER CLASS TRAINING
	GERMANY	22AUG85	8	1	$1,710.17		AUDIT
	GERMANY	19MAR85	9	1	$1,789.85		ADMINISTER CLASS TRAINING
	KOREA	14SEP85	11	1	$2,690.45		TEACH CLASS
	GERMANY	10AUG85	8	1	$1,643.41		TEACH CLASS
	GERMANY	1JUN85	9	1	$1,612.82		TEACH CLASS
NED	JAPAN	27OCT84	12	2	$6,728.00		US/JAPANESE MEETING ON TOXIC SEDIMENTS
	ENGLAND	8MAR85	12	1	$2,661.00		LONDON DUMPING CONVENTION/PIANC
	ENGLAND	2USEP85	9	1	$1,677.00		LONDON DUMPING CONVENTION
	CANADA	18DEC84	6	2	$7,205.00		SITE VISIT PHYSICAL HYDROPOWER MODEL
	CANADA	19MAY85	7	2	$7,394.00		SITE VISIT PHYSICAL HYDROPOWER MODEL
	FRANCE	24JUN85	6	1	$3,464.00		EXCHANGE R&D INFORMATION
	GERMANY	14JUN85	15	1	$15,823.00		PERMANENT INT'L ASSOCIATION OF NAVIGATIONAL CONGRESSES
	CHINA	19SEP85	23	2	$4,700.00		SITE VISIT
	CANADA	5AUG85	5	2	$2,403.06		INT'L TSUNAMI SYMOSIUM ON FLOOD LEVEL PREDICTIONS

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FISCAL YEAR 1985

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL CW COST	REIMBURSED COST	PURPOSE OF VISIT
	BELGIUM	14JUN85	10	1	$2,349.00		PIANC
	CANADA	25SEP85	20	1	$2,684.00		EXCHANGE INFORMATION ON ANALYSIS OF WAVES SPECTRA
	VIRGIN ISLANDS	2NOV84	18	2	$5,496.00		FIELD DATA COLLECTION ON DEEP WATER SEDIMENT
	MEXICO	5MAY85	6	2	$2,900.00		TRANSFER BEACH BYPASSING ANALYSIS SYSTEM
	CANADA	15JUL85	3	1	$1,628.00		EQUIPMENT INSPECTION
	AUSTRALIA	15NOV85	10	1	$3,531.00		MARITIME HYDRAULIC SESSION
	TAIWAN	20DEC84	4	1	$3,000.00		4TH ANNUAL CONFERENCE ON APPLIED NUMERICAL MODELING
	JAPAN	28MAR85	20	1	$7,991.00		COURSE INSTRUCTOR
	ENGLAND	7APR85	7	1	$2,486.00		MONITOR CONTRACT W/UNIVERSITY COLLEGE LONDON
	SWITZERLAND	26JUL85	11	1	$6,249.00		PRESENT PAPER-INT'L CONF ON POTENTIAL FIELDS/TOPOGRAPHY
	CANADA	10CT85	2	1	$394.00		SITE INSPECTION
	CANADA	10CT84	6	1	$2,044.00		CONFERENCE ON CONCRETE TESTING
	MEXICO	9MAR85	6	2	$1,034.00		CONCRETE SEMINAR
	JAPAN	27OCT84	10	1	$3,364.00		MEETING ON MANAGEMENT OF TOXIC SEDIMENTS
	EUROPE	15OCT84	47	1	$3,018.00		DISPOSAL SITE VISITS
	EUROPE	25SEP85	20	1	$1,760.00		JOINT RESEARCH PROJECT
	ENGLAND/GREECE	05SEP85	8	1	$2,800.00		JOINT RESEARCH PROJECTS
	CANADA	1AUG85	3	1	$600.00		ESTABLISH JOINT RESEARCH STUDY
	CANADA	3AUG85	8	2	$1,424.00		PRESENT PAPER-3RD INT'L SYMPOSIUM ON REGULATED STREAMS
	NETHERLANDS	4JUN85	9	1	$1,560.00		PRESENT PAPER-SYMPOSIUM ON COASTAL PROJECTS
WPSC	PANAMA	24FEB85	12	1	$1,678.44		COORDINATE PAN CANAL WIDENING PROJECT
	PANAMA	21JUL85	6	1	$3,762.00		COORDINATE REPORT ON PANAMA CANAL
	BRUSSELS/ENGLN	13JUN85	15	2	$6,405.00		PIANC
	ENGLAND	12JUN85	7	1	$1,727.00		ATTEND LONDON DUMPING CONVENTION
	BRUSSELS	4JUN85	24	2	$7,277.00		PIANC
	ENGLAND	2FEB85	70	1	$6,615.00		ESCAP
	JAPAN	15MAY85	19	1	$3,680.00		ASSIST FLOOD CONTROL PROGRAM
	BRUSSELS	22SEP85	5	1	$1,000.00		PIANC
	BRUSSELS	5JUN85	24	1	$3,380.00		PIANC
	BRUSSELS	15JUN85	9	3	$6,400.00		PIANC
	ST CROIX	05EP85	6	1	$1,107.00		ATTEND FREQUENCY MGMT MEETINGS
	ENGLAND	10SEP85	7	1	$1,893.00		ATTEND INFORMATION MEETINGS
	PAKISTAN	28JAN85	23	1		$14,833.00	REIMBURSED BY BUR OF RECLAMATION-CONDUCT TRNG COURSE
	BRUSSELS	22F1985	9	2	$3,956.00		PIANC
	BRUSSELS/SPAIN	03JUN85	18	1	$3,250.00		CHAIR CWRI SEMINAR ON WATER RESOURCES DEVELOPMENT
	PANAMA	22FEB85	15	1	$2,189.00		COORDINATE CANAL WIDENING PROJECT
	BRUSSELS/NETH	12JUN85	18	1	$3,100.00		PIANC
	BRUSSELS/GER	13OCT85	7	1	$2,932.00		PIANC
	BRUSSELS	23NOV85	8	1	$1,678.00		PIANC
	BRUSSELS/GER	15MAR85	8	2	$1,078.00		PIANC
	INDIA	10JUN85	31	1			REIMBURSED COST UNAVAILABLE-REIMBURSED BY UN
HQUSACE	VARIOUS	29	250	32	$38,219.87	$7,501.84	MEETINGS, INSPECTIONS, AND SITE VISITS FOR THE HQS

NOTE: DOES NOT INCLUDE TRAVEL OF FORMER CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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 CIVIL WORKS FUNDED FOREIGN TRAVEL 21-Nov-86

FISCAL YEAR 1985

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL CW COST	REIMBURSED COST	PURPOSE OF VISIT
TOTALS FOR FISCAL YEAR 1985		NO. OF VISITS: 315	NO. OF DAYS: 2863	NO. OF PEOPLE: 412	TOTAL CIVIL WORKS COST: $513,437.89	REIMBURSED COST: $104,133.84	
					TOTAL TRAVEL COST: $617,573.73		

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"ADE I CIVIL WORKS FUNDED FOREIGN TRAVEL 21-Mar-84

FISCAL YEAR 1984

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL COST	REIMBURSED COST	PURPOSE OF VISIT
NED	CANADA	OCT83	3	2	9890.00		MEETING AS US MEMBER-INT'L JT CMSN RIVER BD OF CONTROL
NAO	NONE						
NAC	NONE						
NAH	NONE						
NAB	JAPAN	29JUN84	3	1	91,736.13		ASSIST IN NEGOTIATING CONSTR. CONTRACTS
NAP	NONE						
SAS	KOREA	29JAN84	15	1	03,164.00		COURSE INSTRUCTOR
	HONDURAS	5MAR84	5	1	01,031.00		SECURITY INSPECTION
	PANAMA	5MAR84	9	1	01,033.00		CONSTRUCTION INSPECTION
SAC	NONE						
SAJ	NONE						
SAM	PUERTO	30CT83	5	1	0979.00		SITE INSPECTION
	GERMANY	16NOV84	11	1	02,941.00		INSTRUCT COURSE
SAS	CANADA	5NOV84	8	2	02,080.00		ATTEND FOUNDERS MEETING
	GERMANY	14JUL84	23	1	02,730.00		INSTRUCT COURSE
	GERMANY	12NOV84	13	1	02,121.00		INSTRUCT COURSE
	JAPAN	15JAN84	21	1	03,274.00		INSTRUCT COURSE
SAW	NONE						
SWD	CANADA	6-NOV83	6	1	01,013.00		REVIEW MODEL STUDY
	CANADA	13NOV84	7	1	01,260.00		REVIEW MODEL STUDY
SPK	JAPAN	10JAN84	19	1	03,967.00		INSTRUCT VALUE ENGINEERING CONCEPT
	GERMANY	16NOV84	12	1	03,031.63		INSTRUCT VALUE ENGINEERING WORKSHOP
SPL	NONE						
SWG	SAUDI ARABIA	10CT83	130	1		53,449.00	REIMBURSED BY SAUDI GOVT-ASSIST IN FACILITY INSPECTION
	SAUDI ARABIA	04FEB84	120	2		99,760.00	REIMBURSED BY SAUDI GOVT-COST ESTIMATING
	JAPAN	22JUNE84	10	1		00.00	BEING COST UNOFFICIAL PAID BY JAPANESE MINISTRY OF COMMTN
OSP	FRANCE	29SEP84	6	1	01,892.00		INT'L SYMPOSIUM-REMOTE SENSING ON ENVIS.
NCD	CANADA	16JAN84	3	1	9848.80		COORDINATE U/INT'L GREAT LAKES TECH INFO NETWORKS BOARD
	CANADA	29MAY84	3	1	0618.71		COORDINATE U/INT'L GREAT LAKES TECH INFO NETWORKS BOARD
	CANADA	10OCT83	4	1	9700.27		INTERNATIONAL JOINT COMMISSION
	CANADA	9DEC83	2	1	9463.00		BRIEFING MEETING
	CANADA	11SEP84	2	2	9772.00		INTERNATIONAL JOINT COMMISSION
	CANADA	18JAN84	3	1	1628.00		BRIEFING MEETING
	CANADA	18FEB84	2	2	9995.00		SYSTEMS EVALUATION COMMITTEE MEETING
	CANADA	9OCT83	3	1	9975.00		GREAT LAKES COMMISSION MEETING
	CANADA	13DEC83	3	1	9349.32		INT'L COORD COMMITTEE ON GREAT LAKES BASIN MEETING
	CANADA	11OCT83	2	1	9377.27		INTERNATIONAL JOINT COMMISSION
	CANADA	16MAR84	1	1	9221.00		EPA STEERING COMMITTEE MEETING
	CANADA	19OCT83	3	1	9491.37		INTERNATIONAL JOINT COMMISSION
	CANADA	21NOV83	2	1	9463.00		BRIEFING ON NIAGARA ICE BOOM
	CANADA	7FEB84	3	1	9499.36		PARTICIPATE IN US/CANADIAN SIMULATION EXERCISE
	CANADA	6MAR84	2	1	9364.00		MEETING ON 1984 NAV SEASON OPENING
	CANADA	26JUN84	2	2	01,129.17		ATTEND COMMEMORATIVE CEREMONY-ST LAWRENCE SEAWAY'S 25TH ANNIVERSARY
	ENGLAND	2SEP84	7	1	01,827.00		PICIC
NCO	SPAIN	25JUL84	3	1	9375.69		INTERNATIONAL JOINT COMMISSION
	CANADA	10CT83	2	2	9816.00		INTERNATIONAL JOINT COMMISSION

NOTE: DOES NOT INCLUDE TRAVEL OF FORMER CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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FISCAL YEAR 1984

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL COST	REIMBURSED COST	PURPOSE OF VISIT
	CANADA	10OCT83	1	2	$882.80		INTERNATIONAL JOINT COMMISSION
	CANADA	11JUL84	3	1	$307.67		INTERNATIONAL JOINT COMMISSION
	CANADA	20JUL84	2	1	$505.33		INTERNATIONAL JOINT COMMISSION
	CANADA	10OCT83	6	2	$1,199.50		INTERNATIONAL JOINT COMMISSION
	CANADA	10CT83	3	1	$227.74		INTERNATIONAL JOINT COMMISSION
	CANADA	2228N84	1	1	$10.50		INTERNATIONAL JOINT COMMISSION
	CANADA	29NOV84	1	1	$213.76		INTERNATIONAL JOINT COMMISSION
	CANADA	5JUN84	1	1	$27a.80		INTERNATIONAL JOINT COMMISSION
	KOREA	16JAN84	15	1	$3,001.00		CONSTRUCTION COURSE INSTRUCTOR
NCC	CANADA	10OCT83	4	2	$609.00		IJC SUPPORT
NCE	CANADA	30AUG84	3	1	$489.00		INT'L ASSOC. FOR HYDRAULIC RESEARCH 7TH SYMPOSIUM
	CANADA	29MAY84	3	2	$697.00		IJC SUPPORT
	CANADA	12JUN84	3	1	$228.00		IJC SUPPORT
	CANADA	5MAY84	1	1	$273.00		IJC SUPPORT
	CANADA	5JUN84	3	1	$417.00		IJC SUPPORT
	CANADA	6JUN84	1	1	$226.00		SITE INVESTIGATION
	CANADA	16MAY84	3	1	$100.00		AD HOC ADVISORY MEETING
	GERMANY	24AUG84	9	1	$1,300.00		WATER RESOURCES CONFERENCE
NCR	NONE						
NCS	CANADA	OCT83	3	2	$1,580.00		IJC
	CANADA	MAY84	3	1	$325.00		MEETING REGARDING HAYES-ENVIRONMENTAL PROJECT
	CANADA	JUN84	3	2	$746.00		MEETING OF INT'L SOURIS RIVER BD OF CONTROL
	CANADA	JUL84	3	1	$790.00		IJC
	CANADA	APR84	3	2	$1,208.00		IJC
	CANADA	JAN84	2	1	$410.00		MEETING REGARDING HAYES-ENVIRONMENTAL PROJECT
	CANADA	AUG84	2	2	$820.60		MEETING W/MANITOBA DNR
	CANADA	APR84	2	2	$200.00		MEETING W/ INT'L RAINY LAKE BD OF CONTROL
	CANADA	OCT83	1	2	$420.00		MEETING OF CANADIAN LAKE OF THE WOODS CONTROL BD
	CANADA	JUL84	4	1	$819.00		PUBLIC MEETING
	CANADA	APR84	1	2	$382.00		
LMVD	ENGLAND	27MAR84	7	2	$2,867.11		INT'L CONFERENCE ON REVETMENTS
LMV	NIGER	16NOV83	30	1		$12,045.00	REIMBURSED BY AID-RECON NIGER RIVER
LMS	BOLIVIA	14JAN84	9	1	$1,648.84		CONFERENCE
	JAPAN	26MAY84	17	1	$2,276.12		CONFERENCE
LMM	NONE						
NAD	NONE						
NAN	NONE						
NAO	CANADA	19SEP84	5	1	$673.31		PRESENTATION ON FT. RANDALL DAM
SWD	GERMANY	40CT83	6	1	$733.00		COURSE INSTRUCTOR
	KOREA	APRIL84	17	1	$3,125.00		COURSE INSTRUCTOR
SWA	NONE						
SWG	NONE						
SWF	GERMANY	20MAR84	11	1	$1,914.00		COURSE INSTRUCTOR
	GERMANY	3JMAR84	14	1	$1,791.00		COURSE INSTRUCTOR
SWL	NONE						
SWT	NONE						
NPD	CANADA	60CT83	1	3	$69.00		COLUMBIA RIVER TREATY OPERATING COMMITTEE MEETING

NOTE: DOES NOT INCLUDE TRAVEL OF FORMER CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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FISCAL YEAR 1984

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL COST	REIMBURSED COST	PURPOSE OF VISIT
	CANADA	14JUN84	1	3	934.00		COLUMBIA RIVER TREATY OPERATING COMMITTEE MEETING
	CANADA	18APR84	8	1	9441.00		IEEE WEST COAST TRANSFORMER SUBCOMMITTEE MEETING
	CANADA	14FEB84	1	3	969.00		COLUMBIA RIVER TREATY OPERATING COMMITTEE MEETING
	CANADA	16JUL84	3	2	9844.00		NORTHWEST POWER POOL OPERATING COMMITTEE MEETING
	CANADA	29NOV83	1	2	9411.00		RCC CONSULT
	JAPAN	30SEP84	22	1	$3,172.00		INSPECT EROSION CONTROL STRUCTURES
	JAPAN	30SEP84	15	1	$3,079.00		INSPECT EROSION CONTROL STRUCTURES
NPA	CANADA	16SEP84	5	1	9718.00		JOINT RESPONSE TEAM MEETING ON POLLUTION
NPP	PUERTO RICO	4AUG84	8	1	$1,361.00		CONCRETE COURSE
	CANADA	4SEP84	6	1	9680.00		ATTEND INT'L CONFERENCE ON BIOLOGY OF PACIFIC SALMON
	JAPAN	30SEP84	10	0	$21,778.00		INSPECT EROSION CONTROL STRUCTURES
NPS	CHINA	20CT83	20	1		$3,851.00	REIMBURSED BY STATE DEPT-TIANSHENBOBIAO HYDRO PROJECT
	CANADA	18APR84	3	1	9137.00		ANNUAL SNOW RECON
	CANADA	13MAR84	3	1	9109.00		FISH WORKSHOP
	CANADA	30MAY84	3	1	9218.00		ANNUAL SNOW RECON
	CANADA	15MAY84	3	2	9695.00		ANNUAL SNOW RECON
	KOREA	27JUL84	28	1	$3,784.00		ASSIST FAR EAST DIV W/HARRIS H500 COMPUTER
NPW	CANADA	25JUN84	3	2	$2,444.00		INSPECT THRUST BEARINGS
SPB	NONE						
SPL	NETHERLANDS	30APR84	8	1	$1,278.00		ECONOMIC COMMISSION-EUR TASK FORCE
SPK	NONE						
SPN	NONE						
POD	AM SAMOA	11MAR84	8	2	$1,988.00		SITE VISIT
	AM SAMOA	15APR84	5	1	$1,205.00		INSPECT PROJECT
	AM SAMOA	8JAN84	7	1	9665.00		SITE VISIT
	AM SAMOA	6APR84	7	1	$1,144.00		SITE VISIT
	AM SAMOA	18JUN84	4	1	9703.00		SITE VISIT
	AM SAMOA	4JAN84	9	1	9848.00		EMERGENCY OPERATION ACT
	AM SAMOA	19AUG84	14	2	$2,900.00		SITE VISIT
	AM SAMOA	25JAN84	10	1	$1,645.00		SITE VISIT
	AM SAMOA	23SEP84	6	1	$1,267.00		SITE VISIT
	AM SAMOA	7MAR84	9	1	$1,485.00		SITE VISIT
	AM SAMOA	12AUG84	10	2	$2,528.00		SITE VISIT
	AM SAMOA	18JUN84	6	1	9619.00		SITE VISIT
	AM SAMOA	10SEP84	2	2	9422.00		SITE VISIT
	AM SAMOA	2MAY84	6	1	9953.00		SITE VISIT
	BIKINI ATOLL	7MAY84	9	1	$1,324.00		SITE VISIT
	CNMI	10MAY84	2	1	889.00		SITE INVESTIGATION
	CNMI	13DEC83	10	2	9434.00		SITE INVESTIGATION
	CNMI	9DEC83	2	1	9164.00		STAFF VISIT
	CNMI	15MAY84	6	1	9526.00		SITE INVESTIGATION
	CNMI	23JUL84	10	3	$3,079.00		PUBLIC MEETING
	CNMI	4MAY84	6	1	9637.00		SITE INVESTIGATION
	CNMI	14AUG84	1	1	9181.00		SITE INVESTIGATION
	CNMI	1MAY84	1	1	962.00		SITE INVESTIGATION
	CNMI	20SEP84	1	1	627.00		SITE INVESTIGATION
	CNMI	25APR84	1	1	9160.00		SITE INVESTIGATION
	CNMI	5JUN84	6	1	$1,019.00		SITE INVESTIGATION
	CNMI	12MAR84	4	3	$2,457.00		SITE INVESTIGATION

NOTE: DOES NOT INCLUDE TRAVEL OF FORMER CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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FISCAL YEAR 1984

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL COST	REIMBURSED COST	PURPOSE OF VISIT
	CHNI	16MAR84	8	1	$1,418.00		SITE INVESTIGATION
	CHNI	20FEB84	6	2	9342.00		SITE INVESTIGATION
	CHNI	30OCT83	6	1	6471.00		COORDINATION
	CHNI	19DEC83	3	1	9858.00		SITE INVESTIGATION
	CHNI	15OCT83	8	1	$1,632.00		SITE VISIT
	CHNI	17JAN84	25	1	$2,870.00		BORING INSPECTION
	CHNI	15SEP84	7	1	$1,280.00		SITE INVESTIGATION
	CHNI	7APR84	14	2	$2,739.00		PROPERTY INVENTORY
	CHNI	30EC83	5	1	$1,026.00		SITE INVESTIGATION
	CHNI	20EC83	6	1	$1,137.00		SITE INVESTIGATION
	CHNI	4JUL84	19	2	$2,847.00		SITE INVESTIGATION
	CHNI	18SEP84	9	1	$1,670.00		SITE INVESTIGATION
	CHNI	25SEP84	2	1	4244.00		CONFERENCE
	CHNI	11JUL84	5	1	$1,026.00		SITE INVESTIGATION
	CHNI	30CT83	7	1	$7,024.00		DEDICATION
	CHNI	13AUG84	16	2	$3,333.00		PROJECT COORDINATION
	GUAM	21JAN84	24	8	$4,449.00		WORKSHOP
	GUAM	23JAN84	5	1	9954.00		SITE INVESTIGATION
	GUAM	3JAN84	25	1	$2,762.00		SITE INVESTIGATION
	GUAM	14NOV83	5	1	9949.00		SITE INVESTIGATION
	GUAM	16JUL84	5	1	$1,002.00		SITE INVESTIGATION
	GUAM	31DEC83	11	1	$1,787.00		SITE INVESTIGATION
	GUAM	16JUL84	5	1	9978.00		SITE INVESTIGATION
	GUAM	13JAN84	13	1	$1,854.00		SITE INVESTIGATION
	GUAM	16JUL84	11	1	$1,180.00		SITE INVESTIGATION
	GUAM	2FEB84	7	1	9446.00		CMD VISIT TEAM
	GUAM	10JUL84	8	1	8892.00		SITE INVESTIGATION
	GUAM	5OCT83	26	1	$2,537.00		INSPECT PROJECTS
	GUAM	17MAR84	28	2	$3,900.00		INVENTORY DATA
	GUAM	13JUN84	4	1	$1,001.00		SITE INVESTIGATION
	GUAM	24OCT83	9	8	$1,878.00		PUBLIC MEETING
	GUAM	24JAN84	3	1	9960.00		FLOOD STUDY
	GUAM	13MAR84	6	1	$1,342.00		SITE VISIT
	HAWAII	5DEC83	10	2	$1,590.00		COASTAL EMERGENCY
	HAWAII	6DEC83	4	1	4789.00		SITE INVESTIGATION
	TERR ISLAND	18MAY84	2	1	822.00		SITE INVESTIGATION
	TERR ISLAND	25APR84	4	2	$1,445.00		SITE INVESTIGATION
	TTPI	9FEB84	7	1	$1,195.00		MITIGATION PLANS
	TTPI	18MAR84	14	1	$2,234.00		SITE INVESTIGATION
	TTPI	10FEB84	17	2	$4,527.00		SITE INVESTIGATION
	TTPI	17APR84	5	1	8772.00		SITE INVESTIGATION
	TTPI	15NOV83	9	1	$1,471.00		SITE INVESTIGATION
	TTPI	9FEB84	9	1	$1,280.00		SITE INVESTIGATION
	TTPI	3APR84	42	8	$8,704.00		SITE INVESTIGATION
	TTPI	1MAY84	6	1	8914.00		SITE INVESTIGATION
	TTPI	29NOV83	14	2	$2,469.00		COASTAL INVENTORY
	TTPI	10SEP84	6	1	9661.00		SITE INVESTIGATION
	TTPI	3SEP84	16	1	$2,390.00		SITE INVESTIGATION
DERM	NONE						

NOTE: DOES NOT INCLUDE TRAVEL OF FORMER CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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FISCAL YEAR 1986

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL COST	REIMBURSED COST	PURPOSE OF VISIT
CERL	CANADA	6NOV85	5	1	$825.00		MEETING W/NAT'L DEFENSE HQS
	CANADA	22JUL86	5	1	$524.00		INT'L SYMOSIUM OF CID
	GERMANY	10DEC85	8	1	$1,780.00		DLH CONFERENCE
	GERMANY	9SEP86	15	1	$2,574.00		SITE VISIT
	GERMANY	10DEC85	14	2	$1,500.00		SITES VISITED
	HONDURAS/PANAMA	23JAN86	12	2	$1,614.00		SITE VISIT
	KOREA	18FEB86	15	1	$3,463.00		CID 86 CONFERENCE
	YUGOSLAVIA	13MAY86	14	1	$1,350.00		RILEM MEETING
CRREL	CANADA	24MAY86	2	1	$511.00		PRESENT LECTURE AT CANADAIR CONFERENCE
	CANADA	13JUL86	3	1	$140.00		FIELD TESTS ON A LIGHTPIER
EASA	NONE						
ESC	NONE						
ETL	NONE						
FESA	NONE						
MRD	SAUDIA ARABIA	30EC85	16	1	$2,816.90		ADMINISTER CLASS TRAINING
	GERMANY	15SEP86	15	1	$2,395.64		TEACH CLASS
	GERMANY	25AUG86	9	1	$1,730.65		TEACH CLASS
	GERMANY	25FEB86	13	1	$1,853.62		ADMINISTER CLASS TRAINING
	GERMANY	31MAR86	14	1	$2,172.27		ADMINISTER CLASS TRAINING
	GERMANY	6NOV86	16	1	$2,339.38		ADMINISTER CLASS TRAINING
	KOREA	23APR86	8	1	$3,463.14		TEACH CLASS
NAD	ENGLAND	10DEC85	6	1	$1,302.00		LONDON DUMPING CONVENTION
	ENGLAND/NETHLDS	14FEB86	14	1	$2,328.00		LONDON DUMPING CONVENTION
	ENGLAND	16JUL86	5	1	$1,025.00		LONDON DUMPING CONVENTION
	NETHERLANDS	27NOV85	7	2	$4,465.00		MEETING ON DREDGE RESEARCH PROGRAM
	ENGLAND	30JUN86	8	1	$2,355.00		MEETING ON R&D EFFORTS
	NETHERLANDS	17JUN86	11	1	$2,317.00		INTERNATIONAL CONFERENCE ON MARINE SIMULATION
	CANADA	4NOV85	5	2	$6,439.00		EVALUATE PHYSICAL HYDROPOWER MODEL
	CANADA	14AUG86	5	2	$6,802.00		EVALUATE PHYSICAL HYDROPOWER MODEL
	DENMARK	16JUN86	9	2	$4,760.00		UNIVERSITY ON DENMARK SEA SYMPOSIUM-PRESENT PAPER
	BARBADOS	22JAN86	6	1	$1,147.00		COASTAL EROSION TECH ASSISTANCE
	BIMINI	12JUN86	1	1	$400.00		SITE VISIT
	NETHERLANDS	SEP86	365	1	$18,300.00		LONG-TERM TRAINING-DELFT INSTITUTE OF DREDGING
	GERMANY	MAR86	5	1	$1,630.00		MEETING ON WAVE MODELS
	CANADA	22MAY86	6	1	$1,600.00		PRESENT PAPER-NAT'L ENGINEERING CONFERENCE,CSCE
	EGYPT	15OCT85	10	1	$7,657.00		PRESENT PAPER-INT'L BASEMENT TECTONICS CONFERENCE
	CANADA	20NOV85	4	1	$1,847.00		EPA WASTE SOLIDIFICATION MEETING
	ENGLAND	28MAR86	5	1	$1,116.00		PRESENT PAPER-INT'L CONF ON FLEXIBLE ARMORED REVETMENT
	CANADA	15SEP86	8	1	$2,586.00		PRESENT PAPER-IV INT'L SYMPOSIUM ON LANDSLIDES
	CANADA	26SEP86	5	1	$719.00		INT'L CONFERENCE ON CONCRETE TESTING
	NETHERLANDS	26NOV85	8	1	$2,380.00		DREDGING MEETING
	JAPAN	7MAY86	6	1	$2,400.00		US/JAPANESE TEST PROGRAM -ANTI-TURBIDITY OVERFLOW SYS
	CHINA	23AUG86	7	2	$3,000.00		SITE INSPECTION
	CANADA	19NOV85	5	2	$2,350.00		EPA WASTE SOLIDIFICATION MEETING

NOTE: DOES NOT INCLUDE TRAVEL OF FORMER CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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FISCAL YEAR 1994

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL COST	REIMBURSED COST	PURPOSE OF VISIT
	JAPAN	30OCT93	3	1	$1,500.00		PRESENT PAPER-BOTTOM SEDIMENTS
	CANADA	1NOV94	4	1	$1,078.00		PRESENT PAPER-DREDGING SYMPOSIUM
	ENGLAND/NETHLDS	15JUN94	79	1	$3,637.00		MEET W/NETHERLANDS ORG FOR APPLIED SCIENTIFIC RESEARCH
	CZECHOSLOVAKIA	13JUN94	12	1	$2,520.00		2ND INTERNATIONAL WETLANDS CONFERENCE
WRSC	KOREA	2DEC93	9	1	$2,700.00		COURSE INSTRUCTOR
	BRUSSELS	21SEP94	7	1	$1,359.00		PIANC
	BRUSSELS	1APR94	4	2	$1,357.00		PIANC
	BRUSSELS/ENGL	26FEB94	6	1	$1,103.00		PIANC
	ENGLAND	10FEB94	8	1	$1,416.00		ATTEND DREDGE MEETING
	FINLAND	29MAY94	14	2	$5,705.00		PIANC
	FINLAND	3JUN94	8	4	$3,176.00		PIANC
	GERMANY	29MAY94	4	1	$320.00		REVIEW STATUS OF EUD VOICE COMMO UPGRADE
	GUAM	2MAR94	6	1	$2,099.00		RESEARCH ON CONTINGENT CASE STUDY
	ITALY	NOV93	5	1			REIMBURSED BY UNESCO,COST UNAVAILABLE
	NETHERLANDS	26NOV93	8	1	$2,356.00		MEET W/DUTCH ENGINEERS
	NETHLDS/BRUS	27NOV93	9	1	$675.00		MEET W/DUTCH ENGINEERS
	PANAMA	1JUL94	8	1	$1,372.00		CONSULT W/ CANAL COMMISSION
HQUSACE	VARIOUS	24	186	20	$30,470.69	$0.00	MEETINGS,INSPECTIONS,AND SITE VISITS FOR THE HQS

	NO. OF VISITS	NO. OF DAYS	NO. OF PEOPLE	TOTAL CIVIL WORKS COST	REIMBURSED COST
TOTALS FOR FISCAL YEAR 1994	252	2049	330	$410,826.17	$29,096.00

TOTAL TRAVEL COST
$439,922.17

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FISCAL YEAR 1983

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL COST	REIMBURSED COST	PURPOSE OF VISIT
NED	CANADA	OCT82	2	1	$360.00		MEETING AS US MEMBER-INT'L ST CROIX RIVER BD OF CONTROL
	JAPAN	NOV82	11	1	$2,600.00		TECHNOLOGY EXCHANGE TOXIC DREDGE MATERIAL
	INDIA	NOV82	90	1		$7,120.00	REIMBURSED BY WORLD METEOROLOGICAL ORGANIZATION
NAO	NONE						
NAS	NONE						
NAN	NONE						
NAO	NONE						
NAP	GABON/W.AFRICA	80CT82	16	2	$10,700.00		SHOALING STUDY FOR GOVT OF GABON
SAD	PANAMA	15DEC82	4	1	$892.00		SITE VISIT
	PANAMA	14MAR83	5	1	$1,244.00		AEIG SECURITY BRIEFINGS
	PANAMA	22FEB83	5	1	$1,295.5		PROJECT VISIT-FT CLAYTON
	PANAMA	2MAY83	2	2	$640.0		PROJECT INSPECTIONS
SAC	NONE						
SAJ	NONE						
SAM	NONE						
SAS	KOREA/JAPAN	19MAR83	16	1	$4,393.00		COURSE INSTRUCTOR
	GERMANY	29OCT82	28	1	$2,829.00		COURSE INSTRUCTOR
SAW	NONE						
SPD	SAUDI/GERMANY	28DEC82	15	1	$5,850.00		CONFERENCE ON CONSTRUCTION QUALITY
	CANADA	30OCT82	6	1	$1,921.00		TRAINING
	ENGLAND	29AUG83	12	1	$2,633.00		CONFERENCE
	ECUADOR	19JUN83	16	1	$1,909.00		ASSISTENCE TEAM FOR FLOODING
	KOREA	31JUL83	7	1	$2,031.00		INSTRUCTOR
ORH	NONE						
ORL	GERMANY	6MAR83	12	1	$1,228.41		COURSE INSTRUCTOR
	CANADA	9AUG83	5	1	$1,052.91		INSPECT MODEL OF HYDROELECTRIC GENERATING STATION
	CANADA	8AUG83	5	1	$877.12		INSPECT MODEL OF HYDROELECTRIC GENERATING STATION
	CANADA	10SEP83	5	1	$855.23		INSPECT MODEL OF HYDROELECTRIC GENERATING STATION
	CANADA	9SEP83	5	1	$855.23		INSPECT MODEL OF HYDROELECTRIC GENERATING STATION
ORN	SAUDI ARABIA	27JUL83	120	1		$4,880.00	REIMBURSED BY SAUDI GOV'T-CONSTRUCTION CONTRACT WORK
ORP	NONE						
NCD	CANADA	15JUN83	4	2	$1,649.24		INTERNATIONAL JOINT COMMISSION
	BELGIUM	8SEP83	4	1	$1,277.00		PIANC
	CANADA	10NOV82	2	1	$637.80		SITE VISIT-COMPENSATION WORKS
	CANADA	11SEP83	2	2	$1,084.00		MEETING W/INT'L LAKE SUPERIOR BD OF CONTROL
	CANADA	8SEP83	2	2	$1,034.00		MEETING W/ INT'L NIAGARA BD OF CONTROL
	CANADA	15AUG83	2	1	$1,391.00		INTERNATIONAL JOINT COMMISSION
	CANADA	15NOV82	2	1	$546.23		MEETING W/ ST LAWRENCE RIVER BOARD OF CONTROL
	CANADA	19SEP83	3	1	$775.62		INTERNATIONAL JOINT COMMISSION
	CANADA	7JUL83	1	1	$195.00		INTERNATIONAL JOINT COMMISSION
	CANADA	18NOV82	3	2	$1,112.00		ITC PUBLIC HEARING ON LAKE ERIE REGULATION STUDY
	CANADA	19SEP83	2	2	$1,345.20		MEETING W/ ST LAWRENCE RIVER BOARD OF CONTROL

NOTE: DATA DOES NOT INCLUDE TRAVEL OF FORMER CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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PAGE 2 CIVIL WORKS FUNDED FOREIGN TRAVEL 22-Feb-84

FISCAL YEAR 1983

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL COST	REIMBURSED COST	PURPOSE OF VISIT
NCB	CANADA	05OCT82	1	1	$0.00		INTERNATIONAL JOINT COMMISSION
	CANADA	22JUN83	2	1	$141.65		INTERNATIONAL JOINT COMMISSION
	CANADA	14FEB83	1	1	$140.40		INTERNATIONAL JOINT COMMISSION
	CANADA	7MAR83	1	1	$12.20		INTERNATIONAL JOINT COMMISSION
	CANADA	14FEB83	2	1	$346.50		INTERNATIONAL JOINT COMMISSION
	CANADA	21JUN83	1	1	$2.50		INTERNATIONAL JOINT COMMISSION
	CANADA	5JUL83	1	2	$2.95		INTERNATIONAL JOINT COMMISSION
	CANADA	5MAR83	1	1	$16.95		INTERNATIONAL JOINT COMMISSION
	CANADA	18NOV82	1	2	$22.50		INTERNATIONAL JOINT COMMISSION
	CANADA	22JUN83	1	1	$0.00		INTERNATIONAL JOINT COMMISSION
	CANADA	14FEB83	4	2	$1,025.95		INTERNATIONAL JOINT COMMISSION
	CANADA	10CT82	2	1	$500.62		INTERNATIONAL JOINT COMMISSION
	CANADA	21MAR83	2	1	$150.45		INTERNATIONAL JOINT COMMISSION
	CANADA	17AUG83	1	3	$2.60		INTERNATIONAL JOINT COMMISSION
	CANADA	10CT82	5	4	$1,701.28		INTERNATIONAL JOINT COMMISSION
	CANADA	15JUN83	1	1	$63.70		INTERNATIONAL JOINT COMMISSION
	CANADA	15FEB83	2	6	$906.70		INTERNATIONAL JOINT COMMISSION
	CANADA	18NOV82	2	1	$195.10		INTERNATIONAL JOINT COMMISSION
	CANADA	11AUG83	2	1	$217.27		INTERNATIONAL JOINT COMMISSION
	CANADA	17AUG83	1	1	$0.00		INTERNATIONAL JOINT COMMISSION
	CANADA	9SEP83	1	1	$0.00		INTERNATIONAL JOINT COMMISSION
	CANADA	19SEP83	2	2	$173.85		INTERNATIONAL JOINT COMMISSION
	CANADA	14FEB83	1	3	$826.19		INTERNATIONAL JOINT COMMISSION
	CANADA	21JUN83	1	5	$2.50		INTERNATIONAL JOINT COMMISSION
NCC	SAUDI ARABIA	2FEB83	17	1	$2,565.00		CONSTRUCTION COURSE INSTRUCTOR
NCE	CANADA	12DEC82	5	1	$313.00		IJC SUPPORT
	CANADA	15MAR83	2	2	$563.00		IJC SUPPORT
	CANADA	2MAR83	2	1	$271.00		IJC SUPPORT
	CANADA	8JUN83	1	1	$16.00		IJC SUPPORT
	CANADA	9JUN83	1	1	$12.00		IJC SUPPORT
	CANADA	15MAR83	3	1	$474.00		IJC SUPPORT
	CANADA	8JUN83	2	5	$547.00		IJC SUPPORT
NCR	NONE						
NCS	CANADA	JUN83	3	2	$750.00		IJC
	CANADA	SEP83	2	1	$143.00		IJC
LMVD	NONE						
LMK	NIGER	11MAY83	1X	3		$24,704.00	REIMBURSED BY AID-NIGER RIVER BASIN AUTHORITY MEETING
	NIGER	24JUL83	5D	1		$12,450.00	REIMBURSED BY AID-NECOM NIGER RIVER CONFERENCE
LMS	SWITZERLAND	25AUG83	24	1	$2,085.05		
LMM	NONE						
LMN	NONE						
MRD	NONE						
MRK	NONE						
MRO	BRAZILAND	27JUN83	27	2	$8,508.59		CONSULT ON RIVER BASIN MASTER PLAN
SMD							
SMA	NONE						

NOTE: DATA DOES NOT INCLUDE TRAVEL OF CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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PAGE 1 CIVIL WORKS FUNDED FOREIGN TRAVEL 21-Oct-86

FISCAL YEAR 1983

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL COST	REIMBURSED COST	PURPOSE OF VISIT
SAD	NONE						
SAM	GERMANY	14OCT82	16	1	$2,492.00		COURSE INSTRUCTOR
	SAUDI ARABIA	26OCT82	23	1	$2,197.00		COURSE INSTRUCTOR
SAL	NONE						
SAT	NONE						
NPD	PUERTO RICO	18JAN83	4	2	$2,496.00		VISIT CERRILLOS PROJECT
	CANADA	19AUG83	1	1	$46.00		ATTEND "NON-TREATY STORAGE" MEETING
	CANADA	12APR83	2	2	$60.00		COLUMBIA RIVER TREATY OPERATING COMMITEE MEETING
	CANADA	29JUN83	3	1	$186.00		WESTERN SYSTEMS COORDINATING COUNCIL MEETING
	CANADA	15MAR83	5	1	$640.00		INSPECT COILS AT GE PLANT FOR JOHN DAY PROJECT
	CANADA	10MAY83	2	2	$566.00		NORTHWEST POWER POOL OPERATING COMMITTEE MEETING
	CANADA	9MAY83	1	1	$207.00		ATTEND "NON-TREATY STORAGE" MEETING
	PANAMA	19JUN83	10	2	$5,668.00		ASSIST POD IN NAMPIL RIVER HYDRO DESIGN
	PUERTO RICO	18JAN83	4	1	$928.00		GDM MEETING
	SWEDEN	21SEP83	23	1	$1,332.00		TECHNICAL CONFERENCE ON SNOWMELT RUNOFF MODELS
NPA	NONE						
NPP	FAR EAST	19JAN83	20	1		$3,161.00	REIMBURSED BY UN-CONSULTANT ON FLOOD FORECASTING
	CANADA	16MAR83	5	1	$1,052.00		INSPECT CONTRACT WORK ON GENERATOR COILS
NPS	CANADA	3MAY83	3	2	$92.00		ANNUAL SNOW RECON
	CANADA	31MAY83	3	2	$92.00		ANNUAL SNOW RECON
NPW	CANADA	22FEB83	5	1	$300.00		INSPECT GENERATOR COIL
SPD	ENGLAND	29AUG83	13	1	$1,563.45		51ST EXEC. MEETING COMMISSION ON LARGE DAMS
	AFRICA	7NOV82	17	1	$3,986.00		ATTEND 18TH INT'L CONFERENCE ON COASTAL ENGINEERING
SPL	NONE						
SPK	NONE						
SPN	NONE						
POD	AM SAMOA	16NOV82	4	1	$697.00		SITE INVESTIGATION
	AM SAMOA	21JUN83	4	1	$956.00		BREAKWATER INSPECTION
	AM SAMOA	14AUG83	3	1	$892.00		GEOLOGIC RECONNAISSANCE
	AM SAMOA	5DEC82	4	1	$785.00		SITE INVESTIGATION
	AM SAMOA	14AUG83	4	1	$842.00		SITE INVESTIGATION
	AM SAMOA	6APR83	3	1	$829.00		TECHNICAL ASSISTANCE
	AM SAMOA	27NOV82	15	1	$951.00		COORDINATE W/ GOVT
	AM SAMOA	11JUL83	4	1	$865.00		SITE INVESTIGATION
	AM SAMOA	27SEP83	4	1	$271.00		SITE INVESTIGATION
	AM SAMOA	6MAR83	4	1	$452.00		SITE INVESTIGATION
	AM SAMOA	27AUG82	4	1	$761.00		BREAKWATER INSPECTION
	CNMI	14FEB83	5	1	$1,170.00		SITE INVESTIGATION
	CNMI	15APR83	6	1	$830.00		SITE INVESTIGATION
	CNMI	18JUL83	7	1	$1,476.00		SITE INVESTIGATION
	CNMI	11APR83	4	1	$430.00		SITE INVESTIGATION
	CNMI	16JUL83	16	2	$5,004.00		SITE INVESTIGATION
	CNMI	20MAR83	4	1	$647.00		SITE INVESTIGATION
	CNMI	27AUG83	1	1	$256.00		SITE INVESTIGATION
	CNMI	21JAN83	4	1	$626.00		DREDGING INSPECTION
	CNMI	11JUL83	16	1	$1,538.00		SITE INVESTIGATION

NOTE: DATA DOES NOT INCLUDE TRAVEL OF FORMER CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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FISCAL YEAR 1983

DIV/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL COST	REIMBURSED COST	PURPOSE OF VISIT
	CNMI	19JAN83	4	1	$511.00		SITE INVESTIGATION
	CNMI	15JUN83	15	1	$1,128.00		SITE INVESTIGATION
	CNMI	10JAN83	1	1	$24.00		SITE INVESTIGATION
	CNMI	26MAY83	1	1	$27.00		SITE INVESTIGATION
	CNMI	20DEC82	2	1	$104.00		GROUND BREAKING
	CNMI	21APR83	8	1	$977.00		PERMIT INSPECTION
	CNMI	30NOV82	12	1	$565.00		SITE INVESTIGATION
	CNMI	12SEP83	17	1	$1,200.00		EPA REVIEW
	CNMI	29NOV83	21	1+	$1,777.00		PERMIT INSPECTION
	CNMI	4JUL83	5	1	$247.00		SITE INVESTIGATION
	CNMI	28NOV82	5	1	$432.00		PACIFIC BASIN MEETING
	CNMI	25APR83	15	1	$1,279.00		SITE INVESTIGATION
	CNMI	15NOV82	7	2	$486.00		PERMIT INSPECTION
	CNMI	7AUG83	3	1	$467.00		SITE INVESTIGATION
	CNMI	17FEB83	4	2	$1,252.00		WORKSHOP
	CNMI	30MAY83	25	1	$1,538.00		SITE INVESTIGATION
	CNMI	7NOV82	4	2	$691.00		MEETING
	GUAM	14FEB83	5	1	$947.00		PROJECT COORDINATION/WORKSHOP
	GUAM	20JUN83	5	1	$941.00		TECHNICAL ASSISTANCE
	GUAM	19JUN83	8	2	+3,925.00		FLOOD INSURANCE M/P
	GUAM	6AUG83	4	1	$1,059.00		FLOOD INSURANCE MAP
	GUAM	6MAR83	7	1	$1,158.00		SITE INVESTIGATION
	GUAM	5JUL83	4	2	$1,825.00		PUBLIC MEETING
	GUAM	5DEC82	5	1	$1,140.00		COORDINATION W/GUAM REPS
	GUAM	1NOV82	5	1	$1,175.00		SITE INVESTIGATION
	GUAM	15MAY83	5	1	$778.00		SITE INVESTIGATION
	GUAM	14MAR83	20	1	$1,425.00		SITE INVESTIGATION
	GUAM	4FEB83	6	1	$1,314.00		SITE INVESTIGATION
	GUAM	15NOV82	5	1	$1,190.00		WORKSHOP
	GUAM	12AUG83	4	1	$1,323.00		SITE INVESTIGATION
	GUAM	14FEB83	20	5	$5,414.00		WORKSHOP
	GUAM	7MAY83	6	1	$1,224.00		COORDINATE 221 AGREEMENT
	CARIBBEAN	30JUN83	5	2	$92.00		SITE INVESTIGATION
	TTPI	24SEP83	8	1	$781.00		PERMIT INSPECTION
	TTPI	21JUN83	9	1	$1,519.00		REVIEW CONFERENCE
	TTPI	26FEB83	8	1	$902.00		PERMIT INSPECTION
	TTPI	21DEC82	10	2	$2,437.00		SITE INVESTIGATION
	TTPI	23OCT82	42	2	$4,034.00		COASTAL EMERGENCY
6666	BELGIUM	26JUN82	4	1	$1,290.00		PIANC COMMITTEE MEETING
	BELGIUM	6SEP83	4	1	$1,277.00		PIANC-TECHNICAL COMMITTEE I
	BELGIUM	10FEB83	4	1	$1,171.00		PIANC-AUDIT COMMITTEE
	BELGIUM	4DEC82	5	1	$1,325.00		PIANC-COMMITTEE FOR DEVELOPING COUNTRIES
	BELGIUM	9NOV82	2	1	$1,261.00		PIANC
	BELGIUM	5SEP83	4	1	$1,277.00		PIANC-TECHNICAL COMMITTEE II
	BELGIUM (WITS	13OCT82	5	1	$1,408.00		PIANC COUNCIL MEETING
	FRANCE	29SEP82	4	1	$600.00		PIANC
	GUAM	21MAR83	5	1	$2,079.00		FIELD VISIT
	NETHERLANDS	13MAR83	7	1	$1,835.66		PROJECTS VISIT

NOTE: DATA USED MAY INCLUDE TRAVEL OF FARMER CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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FISCAL YEAR 1983

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL COST	REIMBURSED COST	PURPOSE OF VISIT
	NETHERLANDS,B.G	29MAY83	13	1	$1,875.00		DUTCH MOU MEETING, PIANC MEETING
	PORTUGAL	10SEP83	5	1	$1,058.00		PIANC-INT'L COMMISSION FOR STUDY OF LOCKS
	W.GERMANY	12JUN83	11	1	$1,525.00		PIANC-PERMANENT INT'L COMMISSION MEETING
	W.GERMANY	31JUN83	8	7	$9,926.00		PIANC-PERMANENT INT'L COMMISSION MEETING
CERL	GERMANY/BELGUIM	26JAN83	15	1	$2,136.00		MEET W/USAREUR,VISIT SHAPE,DISCUSS CERL PROGRAM
	GERMANY	14AUG83	31	1	$1,492.00		EVALUATE ARMY INSTALLATIONS
CRREL	NONE						
EASP	NONE						
FESA	NONE						
HND	NONE						
MED	ENGLAND	11FEB83	8	1	$1,809.00		LONDON DUMPING CONVENTION
	NETHERLANDS	15JUN83	10	1	$2,050.00		DUTCH DREDGE MEETING
	ENGLAND	21OCT82	8	1	$1,880.00		LONDON DUMPING CONVENTION
	ENGLAND/GER	22JUN83	7	1	$5,677.00		R&D MEETING
	CANADA	12AUG83	7	1		$4,200.00	EVALUATE CANADIAN HYDROPOWER MODEL
	CANADA	9SEP83	5	2		$5,947.00	EVALUATE CANADIAN HYDROPOWER MODEL
	SOUTH AFRICA	11NOV82	11	2	$6,646.00		18TH INTERNATIONAL CONFERENCE OF COASTAL ENGRS.
	PUERTO RICO	4DEC82	5	2	$2,000.00		SITE VISIT
	PUERTO RICO	12MAR83	5	2	$2,000.00		SITE VISIT
	SINGAPORE	18APR83	6	1	$3,000.00		WORLD DREDGING CONFERENCE
	CANADA	APR83	4	1	$1,430.00		CANADIAN COASTAL CONFERENCE
	CANADA	MAY83	6	1	$1,565.00		CANADIAN NATIONAL ENGINEERING CONFERENCE
	GERMANY	OCT82	10	1	$2,100.00		SITE VISIT
	ENGLAND	SEP83	5	1	$1,400.00		MEETING W/HYDRAULIC RESEARCHERS
	INDIA	8DEC82	11	1	$6,142.00		PRESENT PAPER-INT'L ASSOC. OF ENGINEERING GEOLOGY
	JAPAN	5NOV81	14	2	$2,500.00		8TH US/JAPAN MEETING ON MANAGING BOTTOM SEDIMENTS
	ENGLAND/NETHER	3MAR83	22	1	$2,477.00		RESEARCH VISIT
	GERMANY/BELGUIM	25SEP83	18	1	$2,096.00		INTERNATIONAL SYMPOSIUM
MRSC	INDIA	JAN83		1		$8,000.00	REIMBURSED BY UN-INSTRUCT INDIAN ENGINEERS
	BELGUIM	12JUN83	6	1	$1,530.00		8TH INT'L HARBOR CONGRESS
	GERMANY	5DEC83	7	2	$3,022.00		COMMUNICATING STUDY NEEDS SURVEY
	GERMANY	16SEP83	7	1	$1,879.00		COORDINATE EUR DIV COMMUNICATIONS STUDY
	GERMANY	30SEP83	5	1	$1,478.00		COORDINATE EUR DIV COMMUNICATIONS STUDY
	GERMANY	28MAY83	19	1	$2,957.00		ATTEND DUTCH MOU MEETING,PIANC MEETING
	GERMANY	30MAY83	6	1	$1,567.45		PRESENT RESULTS OF ANALYSIS OF PSBS
	GERMANY/FRANCE	27APR83	34	1	$382.00		COORDINATE W/CNES ON JOINT RESEARCH SATELLITE BYSTER
	JAPAN	15APR83	12	1	$3,796.68		ATTEND WORLD DREDGING CONGRESS
	NETHERLANDS	12MAR83	8	1	$1,835.64		VISIT PROJECTS
	NETHERLANDS	28MAY83	20	1	$1,732.00		ATTEND DUTCH MOU MEETING,PIANC MEETING

NOTE: DATA DOES NOT INCLUDE TRAVEL OF FORMER CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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FISCAL YEAR 1981

DIV/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL COST	REIMBURSED COST	PURPOSE OF VISIT
HQUSACE	VARIOUS	31	102	13	$16,765.92	$0.00	MEETINGS, INSPECTIONS, AND SITE VISITS FOR HQS
		NO. OF VISITS	NO. OF DAYS	NO. OF PEOPLE	TOTAL CIVIL WORKS COST	REIMBURSED COST	
TOTALS FOR FISCAL YEAR 1981		223	1752	268	$276,662.55	$72,458.00	
					TOTAL TRAVEL COST		
					$349,120.55		

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FISCAL YEAR 1983

DIV/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL COST	REIMBURSED COST	PURPOSE OF VISIT
NED	CANADA	OCT82	2	1	$360.00		MEETING AS US MEMBER-INT'L ST CROIX RIVER BD OF CONTROL
	JAPAN	NOV82	11	1	$2,600.00		TECHNOLOGY EXCHANGE-TOXIC DREDGE MATERIAL
	INDIA	NOV82	90	1		$7,120.00	REIMBURSED BY WORLD METEOROLOGICAL ORGANIZATION
NAD	NONE						
NAB	NONE						
NAN	NONE						
NAO	NONE						
NAP	GABON/W.AFRICA	05OCT82	18	2	$10,700.00		SHOALING STUDY FOR GOVT OF GABON
SAD	PANAMA	13DEC82	4	1	$982.00		SITE VISIT
	PANAMA	14MAR83	5	1	$1,244.00		AEIG SECURITY BRIEFINGS
	PANAMA	22FEB83	5	1	$1,295.00		PROJECT VISIT-FT CLAYTON
	PANAMA	2MAY83	2	2	$640.00		PROJECT INSPECTIONS
SAC	NONE						
SAJ	NONE						
SAM	NONE						
SAS	KOREA/JAPAN	19MAR83	16	1	$4,393.00		COURSE INSTRUCTOR
	GERMANY	29OCT82	18	1	$2,829.00		COURSE INSTRUCTOR
SAW	NONE						
ORD	SAUDI/GERMANY	28OCT82	15	1	$3,850.00		CONFERENCE ON CONSTRUCTION QUALITY
	CANADA	30OCT82	6	1	$1,011.00		TRAINING
	ENGLAND	29AUG83	12	1	$2,633.00		CONFERENCE
	EQUADOR	19JUN83	16	1	$1,909.00		ASSISTENCE TEAM FOR FLOODING
	KOREA	31JUL83	7	1	$2,031.00		INSTRUCTOR
ORH	NONE						
ORL	GERMANY	6MAR83	12	1	$1,228.41		COURSE INSTRUCTOR
	CANADA	9AUG83	8	1	$1,052.91		INSPECT MODEL OF HYDROELECTRIC GENERATING STATION
	CANADA	8AUG83	5	1	$877.12		INSPECT MODEL OF HYDROELECTRIC GENERATING STATION
	CANADA	10SEP83	8	1	$855.23		INSPECT MODEL OF HYDROELECTRIC GENERATING STATION
	CANADA	9SEP83	5	1	$855.23		INSPECT MODEL OF HYDROELECTRIC GENERATING STATION
ORN	SAUDI ARABIA	27JUL83	120	1		$4,980.00	REIMBURSED BY SAUDI GOV'T-CONSTRUCTION CONTRACT WORK
ORP	NONE						
NCO	CANADA	15JUN83	4	2	$1,449.24		INTERNATIONAL JOINT COMMISSION
	BELGUIM	6SEP83	4	1	$1,277.00		PIANC
	CANADA	10NOV82	2	1	$657.80		SITE VISIT-COMPENSATION WORKS
	CANADA	11SEP83	3	2	$1,084.00		MEETING W/INT'L LAKE SUPERIOR BD OF CONTROL
	CANADA	8SEP83	2	2	$1,036.00		MEETING W/ INT'L NIAGARA BD OF CONTROL
	CANADA	15AUG83	2	3	$1,391.00		INTERNATIONAL JOINT COMMISSION
	CANADA	15NOV82	2	1	$546.23		MEETING W/ ST LAWRENCE RIVER BOARD OF CONTROL
	CANADA	19SEP83	3	1	$775.62		INTERNATIONAL JOINT COMMISSION
	CANADA	7JUL83	1	1	$195.00		INTERNATIONAL JOINT COMMISSION
	CANADA	18NOV82	3	2	$1,112.00		IJC PUBLIC HEARING ON LAKE ERIE REGULATION STUDY
	CANADA	19SEP83	2	3	$1,345.20		MEETING W/ ST LAWRENCE RIVER BOARD OF CONTROL

NOTE: DATA DOES NOT INCLUDE TRAVEL OF FORMER CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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FISCAL YEAR 1983

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL COST	REIMBURSED COST	PURPOSE OF VISIT
NLD	CANADA	05FEB83	1	1	$0.00		INTERNATIONAL JOINT COMMISSION
	CANADA	22JUN83	2	1	$191.65		INTERNATIONAL JOINT COMMISSION
	CANADA	14FEB83	1	1	$190.40		INTERNATIONAL JOINT COMMISSION
	CANADA	7MAR83	1	1	$12.20		INTERNATIONAL JOINT COMMISSION
	CANADA	14FEB83	3	1	$346.50		INTERNATIONAL JOINT COMMISSION
	CANADA	21JUN83	1	1	$2.50		INTERNATIONAL JOINT COMMISSION
	CANADA	5JUL83	1	2	$2.95		INTERNATIONAL JOINT COMMISSION
	CANADA	5MAR83	1	4	$16.95		INTERNATIONAL JOINT COMMISSION
	CANADA	18NOV82	1	2	$22.50		INTERNATIONAL JOINT COMMISSION
	CANADA	22JUN83	1	1	$0.00		INTERNATIONAL JOINT COMMISSION
	CANADA	14FEB83	4	2	$1,325.95		INTERNATIONAL JOINT COMMISSION
	CANADA	12FEB83	2	1	$500.62		INTERNATIONAL JOINT COMMISSION
	CANADA	21MAR83	2	1	$150.45		INTERNATIONAL JOINT COMMISSION
	CANADA	17AUG83	1	3	$2.60		INTERNATIONAL JOINT COMMISSION
	CANADA	10CT82	5	6	$1,701.28		INTERNATIONAL JOINT COMMISSION
	CANADA	15JUN83	1	1	$43.70		INTERNATIONAL JOINT COMMISSION
	CANADA	15FEB83	2	6	$906.70		INTERNATIONAL JOINT COMMISSION
	CANADA	10NOV82	2	1	$195.10		INTERNATIONAL JOINT COMMISSION
	CANADA	17AUG83	2	1	$217.27		INTERNATIONAL JOINT COMMISSION
	CANADA	17AUG83	1	1	$0.00		INTERNATIONAL JOINT COMMISSION
	CANADA	9SEP83	1	1	$0.00		INTERNATIONAL JOINT COMMISSION
	CANADA	19SEP83	2	2	$373.85		INTERNATIONAL JOINT COMMISSION
	CANADA	14FEB83	1	3	$426.19		INTERNATIONAL JOINT COMMISSION
	CANADA	21JUN83	1	5	$2.50		INTERNATIONAL JOINT COMMISSION
NCC	SAUDI ARABIA	2FEB83	17	1	$2,563.00		CONSTRUCTION COURSE INSTRUCTOR
NCE	CANADA	12DEC82	1	1	$213.00		IJC SUPPORT
	CANADA	15MAR83	2	2	$563.00		IJC SUPPORT
	CANADA	2MAR83	2	1	$271.00		IJC SUPPORT
	CANADA	8JUN83	1	1	$16.00		IJC SUPPORT
	CANADA	9JUN83	1	1	$12.00		IJC SUPPORT
	CANADA	15MAR83	3	1	$474.00		IJC SUPPORT
	CANADA	8JUN83	2	1	$547.00		IJC SUPPORT
NLN	NONE						
NLS	CANADA	JUN83	1	2	$150.00		IJC
	CANADA	SEP83	2	1	$195.00		IJC
LMD	NONE						
LMN	NIGER	11MAR83	19	3		$26,700.00	REIMBURSED BY AID-NIGER RIVER BASIN AUTHORITY MEETING
	NIGER	24JUL83	30	1		$12,450.00	REIMBURSED BY AID-RECON NIGER RIVER CONFERENCE
LMS	SWITZERLAND	25AUG83	26	1	$2,085.05		
LMM	NONE						
LMW	NONE						
NMD	NONE						
NMN	NONE						
NMO	BRAZILAND	23JUN83	27	2	$8,508.59		CONSULT ON RIVER BASIN MASTER PLAN
SMD							
SMA	NONE						

NOTE: DATA DOES NOT INCLUDE TRAVEL OF FOREIGN CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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FISCAL YEAR 1987

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL COST	REIMBURSED COST	PURPOSE OF VISIT
SAD	NONE						
SAE	GERMANY	14OCT86	16	1	$2,992.00		COURSE INSTRUCTOR
	SAUDI ARABIA	26OCT86	21	1	$2,247.00		COURSE INSTRUCTOR
SAL	NONE						
SAT	NONE						
NPD	PUERTO RICO	18JAN87	4	2	$2,496.00		VISIT CERRILLOS PROJECT
	CANADA	19AUG87	1	1	$46.00		ATTEND "NON-TREATY STORAGE" MEETING
	CANADA	12FEB87	2	2	$40.00		COLUMBIA RIVER TREATY OPERATING COMMITTEE MEETING
	CANADA	29JUN87	1	1	$186.00		WESTERN SYSTEMS COORDINATING COUNCIL MEETING
	CANADA	15MAR87	5	1	$640.00		INSPECT COILS AT GE PLANT FOR JOHN DAY PROJECT
	CANADA	10MAY87	2	2	$586.00		NORTHWEST POWER POOL OPERATING COMMITTEE MEETING
	CANADA	09AUG87	1	1	$247.00		ATTEND "NON-TREATY STORAGE" MEETING
	ROMANIA	19JUN87	10	2	$5,668.00		ASSIST POO IN NAMPIL RIVER HYDRO DESIGN
	PUERTO RICO	18JAN87	4	1	$920.00		GDM MEETING
	SWEDEN	21SEP87	21	1	$1,332.00		TECHNICAL CONFERENCE ON SNOWMELT RUNOFF MODELS
NPM	NONE						
NPP	FAR EAST	19JAN87	20	1		$3,161.00	REIMBURSED BY UN-CONSULTANT ON FLOOD FORECASTING
	CANADA	16MAR87	5	1	$1,032.00		INSPECT CONTRACT WORK ON GENERATOR COILS
NPS	CANADA	19APR87	1	2	$42.00		ANNUAL SNOW RECON
	CANADA	31MAY87	1	2	$42.00		ANNUAL SNOW RECON
NPW	CANADA	22FEB87	5	1	$300.00		INSPECT GENERATOR COIL
SPD	ENGLAND	29AUG87	15	1	$1,561.45		51ST EXEC. MEETING COMMISSION ON LARGE DAMS
	AFRICA	7NOV87	17	1	$1,986.00		ATTEND 18TH INT'L CONFERENCE ON COASTAL ENGINEERING
SPL	NONE						
SPX	NONE						
SPN	NONE						
POD	AM SAMOA	16NOV86	4	1	$607.00		SITE INVESTIGATION
	AM SAMOA	21JUN87	4	1	$956.00		BREAKWATER INSPECTION
	AM SAMOA	14AUG87	7	1	$842.00		GEOLOGIC RECONNAISSANCE
	AM SAMOA	5DEC86	6	1	$585.00		SITE INVESTIGATION
	AM SAMOA	14AUG87	6	1	$842.00		SITE INVESTIGATION
	AM SAMOA	5APR87	5	1	$829.00		TECHNICAL ASSISTANCE
	AM SAMOA	27NOV86	15	1	$951.00		COORDINATE W/ GOVT
	AM SAMOA	10JUN87	4	1	$865.00		SITE INVESTIGATION
	AM SAMOA	27SEP87	4	1	$271.00		SITE INVESTIGATION
	AM SAMOA	05MAR87	4	1	$952.00		SITE INVESTIGATION
	AM SAMOA	22JAN87	9	1	$761.00		BREAKWATER INSPECTION
	CNMI	14FEB87	5	1	$1,170.00		SITE INVESTIGATION
	CNMI	15APR87	6	1	$809.00		SITE INVESTIGATION
	CNMI	18JUL87	7	1	$1,476.00		SITE INVESTIGATION
	CNMI	11APR87	4	1	$410.00		SITE INVESTIGATION
	CNMI	16JUL87	10	2	$5,004.00		SITE INVESTIGATION
	CNMI	23MAR87	4	1	$647.00		SITE INVESTIGATION
	CNMI	27AUG87	1	1	$256.00		SITE INVESTIGATION
	CNMI	27JAN87	4	1	$624.00		DREDGING INSPECTION
	CNMI	11JUL87	15	1	$1,536.00		SITE INVESTIGATION

NOTE: DATA DOES NOT INCLUDE TRAVEL OF FORMER CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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FISCAL YEAR 1983

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL COST	REIMBURSED COST	PURPOSE OF VISIT
	CNMI	19JAN83	4	1	$511.00		SITE INVESTIGATION
	CNMI	15JUN83	15	1	$1,128.00		SITE INVESTIGATION
	CNMI	10JAN83	1	1	$24.00		SITE INVESTIGATION
	CNMI	24MAY83	1	1	$27.00		SITE INVESTIGATION
	CNMI	20DEC82	2	1	$104.00		GROUND BREAKING
	CNMI	21APR83	8	1	$977.00		PERMIT INSPECTION
	CNMI	30NOV82	12	1	$545.00		SITE INVESTIGATION
	CNMI	12SEP83	17	1	$1,200.00		EPA REVIEW
	CNMI	29NOV83	21	1	$1,777.00		PERMIT INSPECTION
	CNMI	4JUL83	3	1	$207.00		SITE INVESTIGATION
	CNMI	28NOV82	3	1	$433.00		PACIFIC BASIN MEETING
	CNMI	25APR83	10	1	$1,279.00		SITE INVESTIGATION
	CNMI	15NOV82	7	2	$986.00		PERMIT INSPECTION
	CNMI	3AUG83	3	1	$447.00		SITE INVESTIGATION
	CNMI	17FEB83	4	2	$1,252.00		WORKSHOP
	CNMI	30MAY83	25	1	$2,538.00		SITE INVESTIGATION
	CNMI	7NOV82	4	2	$401.00		MEETING
	GUAM	14FEB83	1	1	$597.00		PROJECT COORDINATION/WORKSHOP
	GUAM	20JUN83	5	1	$941.00		TECHNICAL ASSISTANCE
	GUAM	19JUN83	8	2	$3,025.00		FLOOD INSURANCE MAP
	GUAM	6AUG83	8	1	$1,059.00		FLOOD INSURANCE MAP
	GUAM	6MAR83	7	1	$1,138.03		SITE INVESTIGATION
	GUAM	5JUL83	4	2	$1,825.00		PUBLIC MEETING
	GUAM	5DEC82	5	1	$1,140.00		COORDINATION W/GUAM REPS
	GUAM	1NOV82	5	1	$1,175.00		SITE INVESTIGATION
	GUAM	15MAY83	5	1	$178.00		SITE INVESTIGATION
	GUAM	16MAR83	20	1	$2,225.00		SITE INVESTIGATION
	GUAM	28FEB83	6	1	$1,314.00		SITE INVESTIGATION
	GUAM	15NOV82	5	1	$1,190.00		WORKSHOP
	GUAM	12AUG83	4	1	$1,223.00		SITE INVESTIGATION
	GUAM	14FEB83	24	5	$5,474.00		WORKSHOP
	GUAM	7MAY83	6	1	$1,224.00		COORDINATE 221 AGREEMENT
	MARIANAS	30JUN83	1	2	$42.00		SITE INVESTIGATION
	TTPI	29SEP83	8	1	$783.00		PERMIT INSPECTION
	TTPI	21JUN83	9	1	$1,519.00		REVIEW CONFERENCE
	TTPI	26FEB83	8	1	$502.00		PERMIT INSPECTION
	TTPI	21JUN83	18	2	$2,437.00		SITE INVESTIGATION
	TTPI	21OCT82	42	2	$4,034.00		COASTAL EMERGENCY
BERM	BELGIUM	20CT82	4	1	$1,290.00		PIANC COMMITTEE MEETING
	BELGIUM	6SEP83	4	1	$1,277.00		PIANC-TECHNICAL COMMITTEE I
	BELGIUM	28FEB83	4	1	$1,131.00		PIANC-AUDIT COMMITTEE
	BELGIUM	4DEC82	5	1	$1,325.00		PIANC-COMMITTEE FOR DEVELOPING COUNTRIES
	BELGIUM	9NOV82	2	1	$1,261.00		PIANC
	BELGIUM	5SEP83	4	1	$1,277.00		PIANC-TECHNICAL COMMITTEE II
	BELGIUM,SWITZ	12OCT82	5	1	$1,458.00		PIANC COUNCIL MEETING
	FRANCE	29SEP82	4	1	$600.00		PIANC
	GUAM	2MAR83	3	1	$2,039.00		FIELD VISIT
	NETHERLANDS	12MAR83	9	1	$1,935.64		PROJECTS VISIT

NOTE: DATA DOES NOT INCLUDE TRAVEL OF FORMER CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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FISCAL YEAR 1983

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL COST	REIMBURSED COST	PURPOSE OF VISIT
	NETHERLANDS,W.G	29MAY83	13	1	$1,975.00		DUTCH MOU MEETING, PIANC MEETING
	PORTUGAL	10SEP83	8	1	$1,058.00		PIANC-INT'L COMMISSION FOR STUDY OF LOCKS
	W.GERMANY	1JUN83	11	1	$1,525.00		PIANC-PERMANENT INT'L COMMISSION MEETING
	W.GERMANY	3JUN83	8	7	$9,924.00		PIANC-PERMANENT INT'L COMMISSION MEETING
CERL	GERMANY/BELGUIM	26JAN83	15	1	$2,336.00		MEET W/USAREUR,VISIT SHAPE,DISCUSS CERL PROGRAM
	GERMANY	14AUG83	31	1	$1,492.00		EVALUATE ARMY INSTALLATIONS
CRREL	NONE						
EASA	NONE						
FESA	NONE						
HND	NONE						
NED	ENGLAND	11FEB83	8	1	$1,209.00		LONDON DUMPING CONVENTION
	NETHERLANDS	15JUN83	10	1	$2,050.00		DUTCH DREDGE MEETING
	ENGLAND	21OCT82	8	1	$1,880.00		LONDON DUMPING CONVENTION
	ENGLAND/GER	2JUN83	7	1	$3,477.00		PLE MEETING
	CANADA	12AUG83	3	1		$4,200.00	EVALUATE CANADIAN HYDROPOWER MODEL
	CANADA	9SEP83	5	2		$5,947.00	EVALUATE CANADIAN HYDROPOWER MODEL
	SOUTH AFRICA	11NOV82	11	2	$6,646.00		18TH INTERNATIONAL CONFERENCE OF COASTAL ENGRS.
	PUERTO RICO	4DEC82	5	2	$2,000.00		SITE VISIT
	PUERTO RICO	12MAR83	5	2	$2,000.00		SITE VISIT
	SINGAPORE	18APR83	4	1	$3,000.00		WORLD DREDGING CONFERENCE
	CANADA	APR83	4	1	$1,430.00		CANADIAN COASTAL CONFERENCE
	CANADA	MAY83	6	1	$1,565.00		CANADIAN NATIONAL ENGINEERING CONFERENCE
	GERMANY	OCT82	10	1	$2,100.00		SITE VISIT
	ENGLAND	SEP83	5	1	$1,400.00		MEETING W/HYDRAULIC RESEARCHERS
	INDIA	8DEC82	11	1	$6,342.00		PRESENT PAPER-INT'L ASSOC. OF ENGINEERING GEOLOGY
	JAPAN	5NOV83	14	2	$2,500.00		8TH US/JAPAN MEETING ON MANAGING BOTTOM SEDIMENTS
	ENGLAND/CETHER	3MAR83	22	1	$2,477.00		RESEARCH VISIT
	GERMANY/BELGUIM	25SEP83	18	1	$2,096.00		INTERNATIONAL SYMPOSIUM
WRSC	INDIA	JAN83		1		$8,000.00	REIMBURSED BY UN-INSTRUCT INDIAN ENGINEERS
	BELGUIM	12JUN83	6	1	$1,530.00		8TH INT'L HARBOR CONGRESS
	GERMANY	5DEC83	7	2	$3,022.00		COMMUNICATING STUDY NEEDS SURVEY
	GERMANY	19SEP83	7	1	$1,879.00		COORDINATE EUR DIV COMMUNICATIONS STUDY
	GERMANY	30SEP83	5	1	$1,478.00		COORDINATE EUR DIV COMMUNICATIONS STUDY
	GERMANY	28MAY83	19	1	$2,957.00		ATTEND DUTCH MOU MEETING,PIANC MEETING
	GERMANY	30MAY83	6	1	$1,567.45		PRESENT RESULTS OF ANALYSIS OF PSDS
	GERMANY/FRANCE	27APR83	39	1	$382.00		COORDINATE W/CWES ON JOINT RESEARCH SATELLITE SYSTEM
	JAPAN	15APR83	12	1	$3,794.18		ATTEND WORLD DREDGING CONGRESS
	NETHERLANDS	12MAR83	8	1	$1,835.64		VISIT PROJECTS
	NETHERLANDS	28MAY83	20	1	$1,732.00		ATTEND DUTCH MOU MEETING,PIANC MEETING

NOTE: DATA DOES NOT INCLUDE TRAVEL OF FORMER CORPS EMPLOYEES ON ASSIGNMENT TO OTHER FEDERAL AGENCIES

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FISCAL YEAR (FB)

DIVN/DIST	COUNTRY VISITED	START OF VISIT	TRIP LENGTH (DAYS)	NO. OF PEOPLE	TOTAL COST	REIMBURSED COST	PURPOSE OF VISIT
HQUSACE	VARIOUS	11	102	13	$16,765.92	$0.00	MEETINGS, INSPECTIONS, AND SITE VISITS FOR HQS

	NO. OF VISITS	NO. OF DAYS	NO. OF PEOPLE	TOTAL CIVIL WORKS COST	REIMBURSED COST
TOTALS FOR FISCAL YEAR 1981	223	1732	268	$276,662.55	$72,458.00

TOTAL TRAVEL COST

$349,120.55

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Closing Remarks

Mr. Watkins. I am sure I will have more than a majority of my colleagues' support if we have to go that far. We are living under Gramm-Rudman, and other things. I am living under a situation that seems like no one cares down there about doing one thing, even fulfilling their word and commitment in signed agreements in 1965 over the Red River chloride control project. The Federal Government is breaking their word to people who fought and died for this country.

If the OMB feels that way, if that is what the President wants, I am going to point out the funds being utilized in other areas and they don't have money for our people and our country. If that is what is necessary—I would like to think it will not come to that, but if it is necessary, I will. Mr. Chairman, thank you.

Mr. Bevill. Any other questions? This will wind up our Corps of Engineers hearings on the 1987 appropriations bill. General Hatch, General Kelly, Don Cluff, we are delighted to have you with us all these days. Thank you for your presentation, a very good presentation, General Ryan.

We will stand adjourned now until 10 o'clock tomorrow morning.

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